

## Definition of Research

1. Research is a process of steps used to collect and analyse information to increase our understanding of a topic or issue (p3) .
2. Research is a term used liberally for any kind of investigation that is intended to uncover interesting or new facts.
3. Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation. The Advanced Learner's Dictionary of Current English lays down the meaning of research as "a careful investigation or inquiry specially through search for new facts in any branch of knowledge".

**Social work research** is the systematic critical investigation in the field of social welfare with the purpose of yielding answer to problems of social work and of extending and generalizing social work knowledge and concepts.

### The Three Approaches to Research

In this book, three research approaches are advanced: (a) qualitative, (b) quantitative, and (c) mixed methods. Unquestionably, the three approaches are not as discrete as they first appear. Qualitative and quantitative approaches should not be viewed as rigid, distinct categories, polar opposites, or dichotomies. A study *tends* to be more qualitative than quantitative or vice versa.

**Mixed methods research** resides in the middle of this continuum because it incorporates elements of both qualitative and quantitative approaches. Often the distinction between **qualitative research** and **quantitative research** is framed in terms of using words (qualitative) rather than numbers (quantitative), or using closed-ended questions (quantitative hypotheses) rather than open-ended questions (qualitative interview questions). A more complete way to view the gradations of differences between them is in the basic philosophical assumptions researchers bring to the study, the types of research strategies used in the research (e.g., quantitative experiments or qualitative **case studies**), and the specific methods employed in conducting these strategies (e.g., collecting data quantitatively on instruments versus collecting qualitative data through observing a setting). Moreover, there is a historical evolution to both approaches—with the quantitative

approaches dominating the forms of research in the social sciences from the late 19th century up until the mid-20th century. During the latter half of the 20th century, interest in qualitative research increased and along with it, the development of mixed methods research. With this background, it should prove helpful to view definitions of these three key terms as used in this book:

- **Qualitative research** is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. The final written report has a flexible structure. Those who engage in this form of inquiry support a way of looking at research that honours an inductive style, a focus on individual meaning, and the importance of rendering the complexity of a situation.

- **Quantitative research** is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. The final written report has a set structure consisting of introduction, literature and theory, methods, results, and discussion. Like qualitative researchers, those who engage in this form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling for alternative explanations, and being able to generalize and replicate the findings.

- **Mixed methods research** is an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone.

### **Qualitative Research**

Commonly called “interpretive research”. *Is useful for describing or answering questions about particular, localized occurrences or contexts and the perspectives of a participant group toward events, beliefs, or practices ...a helpful process for exploring a complex research area about which little is known Illuminates the “invisibility of everyday life”*

## **Types of qualitative research**

**Historical research**...studies available data to study, understand, and interpret past events

**Ethnography**: studies cultural patterns and perspectives of participants in their natural settings

**Case study**: examines the characteristics of a particular entity, phenomenon, or person

**Ethology**: Compares the origins, characteristics, and culture of different societies

**Ethnomethodology**: Studies how people make sense of their everyday activities in order to behave in socially accepted ways

**Action research**: teacher-initiated, school-based research used to improve the practitioner's practice by doing or changing something

**Symbolic interaction**: investigates how people construct meaning and shared perspectives by interacting with others

**Phenomenology**: considers how the experience of particular participants exhibits a unique perspective

**Grounded theory**: Investigates how inductively-derived theory about phenomenon is grounded in the data of a particular setting.

## **Quantitative Research**

**Survey Research**: Survey research uses interviews, questionnaires, and sampling polls to get a sense of behavior with intense precision.

**Correlational Research**: Correlational research tests for the relationships between two variables.

**Causal-comparative research**: looks to uncover a cause and effect relationship. This research is not conducted between the two groups on each other. Rather than look solely for a statistical relationship between two variables.

**Experimental Research**: Though questions may be posed in the other forms of research, experimental research is guided specifically by a hypothesis.

**Ex-post facto studies**: Ex post facto study or after-the-fact research is a category of research design in which the investigation starts after the fact has occurred without interference from the researcher. Ex post facto research design does not include any form of manipulation or measurement before the fact occurs, as is the case in true experimental designs.

**Comparative**: aims to make comparisons across different countries or cultures.

**Evaluation**: methods for evaluative purposes, as a specific research methodology, and as an assessment process that employs special techniques unique to the evaluation of social programs.

## Types of Research

The basic types of research are as follows:

(i) **Descriptive vs. Analytical:** *Descriptive research* includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social science and business research we quite often use the term *Ex post facto research* for descriptive research studies. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. Most *ex post facto research* projects are used for descriptive studies in which the researcher seeks to measure such items as, for example, frequency of shopping, preferences of people, or similar data. *Ex post facto studies* also include attempts by researchers to discover causes even when they cannot control the variables. The methods of research utilized in descriptive research are survey methods of all kinds, including comparative and correlational methods. In *analytical research*, on the other hand, the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

(ii) **Applied vs Fundamental:** Research can either be applied (or action) research or fundamental (to basic or pure) research. *Applied research* aims at finding a solution for an immediate problem facing a society or an industrial/business organisation, whereas *fundamental research* is mainly concerned with generalisations and with the formulation of a theory. "Gathering knowledge for knowledge's sake is termed 'pure' or 'basic' research."<sup>4</sup> Research concerning some natural phenomenon or relating to pure mathematics are examples of fundamental research. Similarly, research studies, concerning human behaviour carried on with a view to make generalisations about human behaviour, are also examples of fundamental research, but research aimed at certain conclusions (say, a solution) facing a concrete social or business problem is an example of applied research. Research to identify social, economic or political trends that may affect a particular institution or the copy research (research to find out whether certain communications will be read and understood) or the marketing research or evaluation research are examples of applied research. Thus, the central aim of applied research is to discover a solution for some pressing practical problem, whereas basic research is directed towards finding information that has a broad base of applications and thus, adds to the already existing organized body of scientific knowledge.

(iii) **Quantitative vs. Qualitative:** Quantitative research is based on the measurement of

quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. Qualitative research, on the other hand, is concerned with qualitative phenomenon, i.e., phenomena relating to or involving quality or kind. For instance, when we are interested in investigating the reasons for human behaviour (i.e., why people think or do certain things), we quite often talk of 'Motivation Research', an important type of qualitative research.

This type of research aims at discovering the underlying motives and desires, using in depth interviews for the purpose. Other techniques of such research are word association tests, sentence completion tests, story completion tests and similar other projective techniques. Attitude or opinion research i.e., research designed to find out how people feel or what they think about a particular subject or institution is also qualitative research. Qualitative research is specially important in the behavioural sciences where the aim is to discover the underlying motives of human behaviour. Through such research we can analyse the various factors which motivate people to behave in a particular manner or which make people like or dislike a particular thing. It may be stated, however, that to apply qualitative research in practice is relatively a difficult job and therefore, while doing such research, one should seek guidance from experimental psychologists.

(iv) **Conceptual vs. Empirical:** Conceptual research is that related to some abstract idea(s) or theory. It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones. On the other hand, empirical research relies on experience or observation alone, often without due regard for system and theory. It is data-based research, coming up with conclusions which are capable of being verified by observation or experiment. We can also call it as experimental type of research. In such a research it is necessary to get at facts first hand, at their source, and actively to go about doing certain things to stimulate the production of desired information. In such a research, the researcher must first provide himself with a working hypothesis or guess as to the probable results. He then works to get enough facts (data) to prove or disprove his hypothesis. He then sets up experimental designs which he thinks will manipulate the persons or the materials concerned so as to bring forth the desired information. Such research is thus characterised by the experimenter's control over the variables under study and his deliberate manipulation of one of them to study its effects. Empirical research is appropriate when proof is sought that certain variables affect other variables in some way. Evidence gathered through experiments or empirical studies is today considered to be the most powerful support possible for a given hypothesis.

## Research Paradigms

### Introduction

As researchers, we have to be able to understand and articulate beliefs about the nature of reality, what can be known about it and how we go about attaining this knowledge. These are elements of research paradigms. A paradigm is a basic belief system and theoretical framework with assumptions about 1) ontology, 2) epistemology, 3) methodology and 4) methods. In other words, it is our way of understanding the reality of the world and studying it. We will look closely at the four components of a research paradigm.

### Ontology

*Ontology and epistemology are to research what 'footings' are to a house: they form the foundations of the whole edifice.* (Grix, 2004, p. 59). Ontology refers to “the nature of our beliefs about reality” (Richards, 2003, p. 33). Researchers have assumptions (sometimes implicit) about reality, how it exists and what can be known about it. It is the ontological question that leads a researcher to inquire what kind of reality exists: “A singular, verifiable reality and truth [or] .... socially constructed multiple realities” (Patton, 2002, p. 134).

### Epistemology

Epistemology refers to “the branch of philosophy that studies the nature of knowledge and the process by which knowledge is acquired and validated” (Gall, Gall, & Borg, 2003, p. 13). It is concerned with “the nature and forms [of knowledge], how it can be acquired and how communicated to other human beings” (Cohen, Manion, & Morrison, 2007, p. 7). It is the epistemological question that leads a researcher to debate “the possibility and desirability of objectivity, subjectivity, causality, validity, generalisability” (Patton, 2002, p. 134). Adhering to an ontological belief system (explicitly or implicitly) guides one to certain epistemological assumptions. Therefore, if a singular verifiable truth is assumed, “then the posture of the knower must be one of objective detachment or value freedom in order to be able to discover ‘how things really are’ and ‘how things really work’” (Guba & Lincoln, 1994, p. 108). Conversely, belief in socially constructed multiple realities leads researchers to reject the notion that people should be studied like objects of natural sciences; they get involved with the subjects and try and understand phenomena in their contexts.

### Methodology

Methodology is “an articulated, theoretically informed approach to the production of data” (Ellen, 1984, p. 9). It refers to the study and critical analysis of data production techniques. It is the “strategy, plan of action, process or design” that informs one’s choice of research

methods (Crotty, 1998, p. 3). It “is concerned with the discussion of how a particular piece of research should be undertaken” (Grix, 2004, p. 32). It guides the researcher in deciding what type of data is required for a study and which data collection tools will be most appropriate for the purpose of his/her study. It is the methodological question that leads the researcher to ask how the world should be studied.

## **Methods**

Methods are specific means of collecting and analysing data, such as questionnaires and open ended interviews. What methods to use for a research project will depend on the design of that project and the researcher’s theoretical mindset. However, it must be noted that use of particular methods does not entail ontological and epistemological assumptions.

## **Different Approaches to Educational Research**

We will now look at three different approaches to educational research: 1) Positivism 2) Interpretivism 3) Critical theory. This is essential because as consumers of research, we have to be able to look deeper into claims made by researchers who adhere to different research paradigms. According to Patton (2002), “When researchers operate from different frameworks, their results will not be readily interpretable by or meaningful to each other” (p.134). Being aware of a researcher’s ontological and epistemological beliefs (which are not always made explicit but have to be deduced) will help us better understand the import and relevance of the study. Furthermore, someone who is ideologically rooted in one research paradigm and ignorant of the theoretical underpinnings and terminology of other research paradigms is not in a good position to appraise research conducted under a different tradition.

## **Positivism**

The term positivism refers to a branch of philosophy that rose to prominence during the early nineteenth century because of the works of the French philosopher Auguste Comte (Richards, 2003, p. 37). Positivism assumes that reality exists independently of humans. It is not mediated by our senses and it is governed by immutable laws. The ontological position of positivists is that of realism. Positivists strive to understand the social world like the natural world. In nature, there is a cause-effect relationship between phenomena, and once established, they can be predicted with certainty in the future. For positivists, the same applies to the social world. Because reality is context free, different researchers working in different times and places will converge to the same conclusions about a given phenomenon. The epistemological position of positivists is that of objectivism. Researchers come in as objective observers to study phenomena that exist independently of them and they do not

affect or disturb what is being observed. They will use language and symbols to describe phenomena in their real form, as they exist, without any interference whatsoever. As Hutchinson (1988) states, "Positivists view the world as being 'out there', and available for study in a more or less static form" (cited in Gall et al., 2003, p. 14). Positivists believe that there are laws governing social phenomena, and by applying scientific methods, it is possible to formulate these laws and present them through factual statements.

Many scholars have criticized the positivist approach (see Richards, 2003, p. 37). While objective and scientific methods are appropriate for studying natural objects, they are not as successful when they are applied on social phenomena. The complexity of laws governing individuals, their idiosyncrasies, their relationship with each other, with institutions and with society are in stark contrast with the order and regularity one finds in the natural world. The positivist assumption that applying scientific methods to social phenomena will lead to discovery of laws that govern them has been deemed "naïve" by Richards (2003, p.37) who cites different researchers who go so far as to say that "Positivism is dead. By now, it has gone off and is beginning to smell" and "It has become little more than a term of abuse" (Richards, 2003, p.37).

Criticism of the positivist paradigm lead to the emergence of post-positivism, which "straddles both the positivist and interpretivist paradigms" (Grix, 2004, p. 86). Post-positivism is an attempt to address the weaknesses of the positivist paradigm. The ontological position of post-positivism is that of critical realism. It assumes a reality that exists independent of the observer, but which can only be apprehended imperfectly because of the complexity of social phenomena; it also recognizes the possibility of the researcher's own beliefs and values affecting what is being observed. Positivist methodology relies heavily on experimentation. Hypotheses are put forward in propositional or question form about the causal relation between phenomena. Empirical evidence is gathered; the mass of empirical evidence is then analysed and formulated in the form of a theory that explains the effect of the independent variable on the dependent variable. The approach to analyzing data is deductive; first, a hypothesis is proposed, then it is either confirmed or rejected depending on the results of statistical analysis. The purpose is to measure, control, predict, construct laws and ascribe causality (Cohen et al., 2007). If it could be proved that A caused B, then a theory will be formulated for wider applicability which will illustrate the causal relation between A and B: 'A causes B' or 'A leads to B' etc. To be able to do this, the researcher has to make sure that it was indeed A that caused B, not anything else. This calls for manipulation because in the social world, there are always different factors that could lead to a certain effect. For the



theory to be robust, it has to be able to withstand efforts to refute it empirically. To make sure no other variables caused the effect, positivist researchers try to control extraneous variables, with two or more groups being subjected to the same conditions with the only difference being the independent variable. Establishing causal relation between phenomena without any interference from extraneous variables means that the experiment has internal validity. However, that still leaves open to discussion the question of external validity. The more rigorous the attempts of a researcher to control extraneous variables, the more effect it has on generalisability. If the amount of control has created an environment that is nearly impossible to find in a real world situation, the results of the experiment could be meaningless.

Positivist research often generates numerical data. Gall et al. (2003) sum this up cogently when they say: The use of quantification to represent and analyze features of social reality is consistent with positivist epistemology. Because this epistemology assumes that features of social reality have a constancy across time and settings, a particular feature can be isolated and it can be conceptualized as a variable, that is, as an entity that can take on different values. These values can be expressed as numerical scales. (pp. 19-20)

The quantitative data that positivist researchers use to answer research questions and formulate theories can be collected through true experiments or less rigorous quasi-experiments, standardized tests and large or small scale surveys using closed ended questionnaires. The numeric data that are generated through these methods are subjected to descriptive or inferential statistical analysis.

According to the positivist approach, research is deemed to be of good quality if it has a) internal validity b) external validity c) reliability d) objectivity (Guba & Lincoln, 1994). If the researcher proves that it is the independent variable (and not other variables) that had an effect on the dependent variable, the study is considered to have internal validity. If the results thus arrived at are generalizable, it has external validity. If different researchers conduct the study in different times, places and contexts and arrive at the same results, it has reliability. If researchers study phenomena without contaminating their apprehension, they are considered to be objective.

The positivist paradigm has been widely criticized by interpretivists and critical theorists (See Gage, 2007; Richards, 2003). One of the most commonly repeated criticisms is that scientific methods, though appropriate for studying natural phenomena, fall short when they are used to study individuals and social phenomena (Gage, 2007; Gall et al., 2003; Grix, 2004; Richards, 2003). Although this criticism is not without merit, one must remember that

sometimes, those leveling this criticism at positivism might have different worldviews. As Hughes and Sharrock (1997) point out, “The critics of positivist social science... like all critics have a tendency to present a picture of the opposition, in this case positivism, as if it were not only stupid but without any subtlety and variety” (p.24). Anti-positivists, for all their criticisms, “have never been able to formulate an alternative conception that answers the most important questions” (House, 1991, p. 3). Despite the barrage of criticism from anti-positivists, there has been no decline in positivistic research in education and some positivist researchers have “awakened from their torpor in responding to criticism and began to reply, point by point” (Gage, 2007, p. 6). Grix (2004) outlines the reasons for this most cogently: The attractiveness of an approach seeking the precision, exactitude and power of prediction promised by the natural sciences is understandable. The human sciences can be messy, people unpredictable and factors leading to events hard to unravel. Positivism attempts to overcome this messiness by seeking rules and laws with which to render the social world understandable. (pp. 81-82)

### **Interpretivism**

Interpretivism is a “response to the over-dominance of positivism” (Grix, 2004, p. 82). Interpretivism rejects the notion that a single, verifiable reality exists independent of our senses. Interpretive ontology is anti-foundationalist. It refuses “to adopt any permanent, unvarying (or foundational) standards by which truth can be universally known” (Guba & Lincoln, 2005, p. 204). Instead, interpretivists believe in socially constructed multiple realities. Truth and reality are created, not discovered. It is not possible to know reality as it is because it is always mediated by our senses. Interpretive epistemology is subjective. External reality cannot be directly accessible to observers without being contaminated by their worldviews, concepts, backgrounds etc. As Flick states, “Perception is seen not as a passive-receptive process of representation but as an active constructive process of production” (2004, p.89). Individuals interact with other individuals and society and ascribe meaning and names to different social phenomena.

According to Grix (2004), “researchers are inextricably part of the social reality being researched, i.e. they are not ‘detached’ from the subject they are studying” (p.83). In the case of different well-argued interpretations about one phenomena, one interpretation is not chosen or preferred over others as the “correct” one but the existence of multiple knowledges is accepted with the acknowledgement that different researchers bring different perspectives to the same issue. The goal of interpretive research is not to discover universal, context and value free knowledge and truth but to try to understand the interpretations of individuals

about the social phenomena they interact with. This concept of knowledge is an inevitable corollary of interpretive ontology. If one believes in multiple socially constructed realities, it follows that these realities are approached from different angles by different people. As Blaikie (2000) states: Social researchers can only collect data from some point of view, by making 'observations' through spectacles with lenses that are shaped and colored by the researcher's language, culture, discipline-based knowledge, past experiences (professional and lay), and experiences that follow from these... Therefore, there will always be a gap of some kind between the data that are collected and the reality that they are supposed to represent. (p. 120)

Interpretive methodology requires that social phenomena be understood "through the eyes of the participants rather than the researcher" (Cohen et al., 2007, p. 21). The goal of interpretive methodology is to understand social phenomena in their context. Interpretivists collect mostly qualitative data from participants over an extended period of time, as in ethnography and case studies. The approach to analyzing data thus generated is inductive, i.e. the researcher tries to discover patterns in the data which are collapsed under broad themes to understand a phenomenon and generate theory. This is the polar opposite of the deductive approach, in which researchers start off by identifying patterns and themes before starting the data collection process; once data is collected, researchers would search through the data for words, statements and events which are instances of the pre-identified patterns and themes. Interpretivists use the inductive approach instead of the deductive approach because "they tend to see theory as deriving from data collection and not as the driving force of research" (Grix, 2004, p. 108). Data is mostly verbal instead of statistical and it is usually audio/video recorded to "preserve the events in a fairly authentic manner for subsequent data analysis" (Gall et al., 2003, p. 21).

Interpretive researchers employ methods that generate qualitative data, and although numerical data could be involved, they are not relied upon. Examples of data collection methods that yield qualitative data include: open ended interviews with varying degrees of structure (standardized open-ended interviews, semi-standardized open ended interviews, and informal conversational interview), observations, field notes, personal notes, documents etc. Guba and Lincoln (1994) have proposed a set of criteria to judge the trustworthiness of interpretive research. Research is considered to be of good quality if it has credibility (internal validity), transferability (external validity), dependability (reliability) and confirmability (objectivity) (Guba & Lincoln, 1994, p.114). If researchers are honest and conscientious in their efforts for approximation to truth, the results hold resonance for

people in other contexts and the steps and methods of the study are described in detail, then study has elements of the quality criteria proposed by Guba and Lincoln.

The interpretive paradigm has been criticized for, among other things, being “soft”, incapable of yielding theories that could be generalized to larger populations and the involvement of the researcher with participants which leads to lack of objectivity (Grix, 2004). Richards (2003) disagrees and states that qualitative inquiry is not “soft... it demands rigour, precision, systematicity, and careful attention to detail” (p.6). Although positivist research has its merits, there are social phenomena that could be best investigated under the interpretive paradigm. Surveys, closed ended questionnaires and lists of numbers alone are sometimes not the best option because “they are not designed to explore the complexities and conundrums of the immensely complicated social world that we inhabit” (Richards, 2003, p. 6).

### **Critical Theory**

Critical theory originates from the works of a group of twentieth century authors who were affiliated with the Institute of Social Research at the University of Frankfurt, hence the name ‘the Frankfurt School’. They include Herbert Marcuse, Theodor Adorno, Max Horkheimer, Erich Fromm and later Jürgen Habermas. The ontological position of critical theorists is that of historical realism. It is assumed that a reality exists, but it has been shaped by cultural, political, ethnic, gender and religious factors which interact with each other to create a social system. Epistemologically, critical theory is subjective in that it is assumed that no object can be researched without being affected by the researcher. Critical educational researchers try to be self-conscious of their own epistemological presuppositions and communicate them clearly when entering into an investigation so “no one is confused concerning the epistemological and political baggage they bring with them to the research site” (Kincheloe & McLaren, 2005, pp. 305-306).

Knowledge endorsed by those in power (politically or educationally) is to be viewed critically. The rules that legitimize some bodies of knowledge and delegitimize others should be questioned. In the words of Kincheloe (2008), we should ask ourselves: “How did I get stuck with this body of knowledge and these lenses through which to see the world?” (p.21). The aim of critical educational research is not merely to explain or understand society but to change it (Patton, 2002). It is critical of both interpretive and positivist approaches to research because they are regarded to be “enmeshed in dominant ideology... neither has an interest in changing the world, and neither has an emancipatory goal” (Scott & Usher, 2000, p. 35). Instead of generating knowledge of the social world as it exists and perpetuate knowledge status quo (Kincheloe, 2008), critical researchers endeavor to bring to light the

beliefs and actions that limit human freedom with the ultimate aim of transforming the situation. The task of critical educational researchers is to confront those in positions of power and expose the oppressive structures that subjugate people and create inequality. According to Guba and Lincoln (1994), "The inquirer is cast in the role of instigator and facilitator" (p.113).

Critical methodology is dialogic and dialectical (Guba & Lincoln, 1994); it requires the investigator to engage the subjects in dialogue with the aim of bringing about a change in their outlook on social systems that keep them deprived of intellectual and social needs. To prevent the possibility of the participants being marginalized, researchers use a collaborative approach and engage the subjects in formulating questions, data collection and analysis etc. The transformation of social systems that are built on injustice and discrimination could be achieved by the methodologies employed by critical educational researchers: critical ethnography, critical discourse analysis, action research, ideology critique, etc. Critical ethnography is aimed at probing and criticizing taken for granted assumptions about race, culture, gender, economy, politics etc. to change awareness. In critical discourse analysis, analysts set out to study how the powerful use language to maintain their authority.

According to Gall et al. (2003), "An individual's awareness is both expanded and constrained by the language that is available to the individual for encoding his experience" (p.497).

Therefore, it is possible to control awareness by controlling language. Action research refers to ways of investigating an immediate problem by identifying a problem, planning an intervention, implementing the plan, observing the changes and reflecting on the changes observed (Richards, 2003). Ideology critique exposes values and practices that aim to keep people subjugated.

In critical research, mostly qualitative data is generated, although quantitative data could also be used. Examples of qualitative data collection methods are mentioned under the interpretive paradigm. Critical research is deemed to be of good quality if it takes into account the political, cultural, ethnic and gender antecedents of the situation. Another criterion for quality critical research is the degree to which the subjects' misapprehensions about the dominant ideology and status quo are exposed and the degree to which it facilitates "action designed to redress the unequal and oppressive structures that have now been exposed" (Richards, 2003, p. 40).

## CONCLUSION

Nathaniel Gage (1989) went so far as to call the discussions and disagreements between adherents of different educational research approaches 'the paradigm wars'. Guba and

Lincoln (1994) considered this description overdrawn because it painted the matter as more confrontational than it actually was. Personally, we do not agree with the view that the three paradigms should be treated as three religions: that adherence to one paradigm makes one a heretic according to the lenses of the adherents of other paradigms. This fanatical view would also preclude the possibility of mixing any elements of different paradigms because they are 'incompatible'. One should choose methods and methodology which one finds most suitable for investigating the phenomena one sets out to investigate. We do not believe that one should distort one's own outlook to force oneself to abide by the creed of a philosophical or methodological tradition just to avert the threat or accusation of 'intellectual excommunication'.

## Survey Research

To understand survey research, you now have the map (the six steps that exist in the process of research) and the different paths you can take (quantitative and qualitative). Now we will explore some distinguishing features along the two paths. These features are the **research designs** you can use to collect, analyze, and interpret data using quantitative and qualitative research. Some of the research designs may be familiar; others may be new, such as how these paths can converge with two designs called mixed methods research and action research.

The discussion of designs will provide a more advanced understanding of educational research on your journey. In each chapter to follow, you will learn about each design: its definition, its historical development, its key characteristics, and the steps and procedures of conducting and evaluating a study. At the end of each chapter is a complete journal article using the design that you can use to apply and check your knowledge about the design.

Whether a survey design is longitudinal or cross-sectional, there are key characteristics of both that will help you design a survey or read and evaluate a published survey study. Survey researchers engage in the processes of:

- ◆ Sampling from a population
- ◆ Collecting data through questionnaires or interviews
- ◆ Designing instruments for data collection
- ◆ Obtaining a high response rate

### Sampling from a Population

Survey researchers typically select and study a sample from a population and generalize results from the sample to the population. We need to first define three terms: the population, the target population or sampling frame, and the sample. Figure 12.2 shows the differences among these three terms. At the broadest level is the *population*, in which a group of individuals possesses one characteristic that distinguishes them from other groups. For example, we might have a population made up of high school teachers, individuals who all teach in high schools, or school counselors, individuals who occupy counselor positions in all levels of educational schools. At a more specific level, researchers do not always study an entire population, either because they cannot identify the individuals or because they cannot obtain lists of names. (Lists are used when mailing out a questionnaire.) In practical, operational terms, researchers study a *target population* (sometimes called the *sampling frame*). This is the list or record of individuals in a population that a researcher *can* actually obtain. For example, researchers might obtain a list of all secondary high school teachers in one

school district. This list constitutes the target population or sampling frame. From the target population, researchers choose a sample.

At the most specific level, researchers select a *sample* from the target population. These individuals are the people studied. The most rigorous form of sampling is to use random sampling by employing a procedure such as using a random numbers table. In this process, the researcher selects a sample representative of the population so that claims or inferences can be drawn from the sample to the population. In survey research, it is important to select as large a sample as possible so that the sample will exhibit similar characteristics to the target population. Also, in survey studies, it is sometimes difficult to obtain a good list of the target population. For example, lists of individuals who belong to high school gangs or all left-handed individuals would not be easy to obtain. In many cases, however, the target population can be identified for study, and after several attempts, a good list of individuals for the target population can be compiled. It is also possible in survey research to study the entire population because it is small (e.g., members of literacy councils in a state) and can be easily identified. This

type of survey study, sometimes called a *census study*, permits conclusions to be drawn about the entire population. Therefore, random sampling, hypothesis testing, and the use of inferential statistics are not necessary. For this type of study, survey researchers simply report descriptive statistics about the entire population. When researchers select a sample from a population, however, certain factors may limit a survey researcher's ability to draw valid inference from the sample to the population. Salant and Dillman (1994) identified several factors in good survey research that may compromise drawing these inferences:

- ◆ *To reduce coverage error, have a good sampling frame list on which to select individuals.* When researchers use a good, complete list, their coverage of the population is adequate and not error prone.

- ◆ *To reduce sampling error, select as large a sample from the population as possible.*

The larger the sample, the more the participants will be representative of the entire population and reflect attitudes, beliefs, practices, and trends of the population. Recognize that all samples selected will be only estimates of population values.

- ◆ *To reduce measurement error, use a good instrument, with clear, unambiguous questions and response options.* Such instruments will encourage individuals to respond and answer correctly. Later in this chapter, we discuss how to construct a questionnaire to reduce this error.



◆ *To reduce nonresponse error, use rigorous administration procedures to achieve as large a return rate as possible.* Later in this chapter, we discuss these procedures.

### **Questionnaires and Interviews**

Although many different forms of surveys exist, survey researchers typically collect data using two basic forms: questionnaires and interviews. Researchers need to consider the forms and weigh the advantages and disadvantages of each. You can distinguish these forms by examining who completes or records the data on the instrument: the participants (called *respondents* or *interviewees*) or the researcher. A **questionnaire** is a form used in a survey design that participants in a study complete and return to the researcher. The participant chooses answers to questions and supplies basic personal or demographic information. An **interview survey**, however, is a form on which the researcher records answers supplied by the participant in the study. The researcher asks a question from an interview guide, listens for answers or observes behavior, and records responses on the survey. The quantitative interview procedures, discussed here, are not to be confused with qualitative interviewing. In *quantitative survey interviews*, the investigator uses a structured or semi-structured interview consisting of mostly closed-ended questions, provides response options to interviewees, and records their responses. In *qualitative survey interviews*, an interviewer asks open-ended questions without response options and listens to and records the comments of the interviewee. Several different types of questionnaires and interviews are used in quantitative survey research. Here we will highlight the major types used in education:

- ◆ Mailed questionnaires
- ◆ Web-based questionnaires
- ◆ One-on-one interviews
- ◆ Focus group interviews
- ◆ Telephone interviews

#### ***Mailed Questionnaires***

A **mailed questionnaire** is a form of data collection in survey research in which the investigator mails a questionnaire to members of the sample. Researchers might develop their own questionnaire, modify an existing one, or use one that they have located in the literature. The process consists of locating or developing a questionnaire, sending it out to the sample of the population, using repeated contacts with the sample to obtain a high response rate, checking for potential bias in responses, and analyzing the data. A mailed questionnaire is a convenient way to reach a geographically dispersed sample of a

population. The mail facilitates quick data collection, often in as little time as 6 weeks from the first mailing to the conclusion of data collection. A mailed questionnaire is economical because it involves only duplication and mailing expenses. The disadvantage of mailed questionnaires is that individuals may lack any personal investment in the study and decide not to return the instrument. Also, because the researcher does not have a means for explaining questions, participants may misinterpret items on the survey.

### *Web-Based Surveys or Questionnaires*

With increased use of Web sites and the Internet, Web-based questionnaires are becoming popular. A Web based questionnaire is a survey instrument for collecting data that is available on the computer. Several software programs are available for designing, gathering, and analyzing survey data with sample questions and forms (e.g., see Qualtrix at <http://www.qualtrics.com/survey-software/> or Survey Monkey at <http://www.surveymonkey.com/>).

Educational researchers need to weigh the advantages and disadvantages of using a Web-based survey. On the positive side, such surveys can gather extensive data quickly, employ tested forms and sample questions rather than having to design them, and take advantage of the extensive use of the Web by individuals today, including its use as a site for social networking. However, authors such as Sills and Song (2002) raise important methodological issues that educational survey researchers need to consider. They were concerned about the low response rates from e-mail and Web-based surveys. Contributing to this problem were nonrandom sampling, technological problems, security issues, and problems with Internet junk mail. They note that Internet users often change e-mail addresses. Often surveys are not based on random sampling so that drawing inferences to a general population is difficult. Web-based surveys may be biased toward certain demographic groups that tend to use computers. On the other hand, Web surveys may allow effective and economical surveying of the entire population and thereby skirt around the inference problem. Further, they saw a mixed system of Web-based and mailed surveys as promoting a high response rate.

### *One-on-One Interviews*

One-on-one interviews are a form of survey data collection. In **one-on-one interviewing in survey research**, investigators conduct an interview with an individual in the sample and record responses to closed-ended questions. The process involves developing or locating an instrument and training the interviewer(s) in good interview procedures. This training consists of learning how to provide instructions during the interview,

maintaining confidentiality about the interview, asking the exact question on the interview guide, completing the interview within the time allocated, being courteous, and not interjecting personal opinions into the interview. When multiple interviewers are used, researchers train all individuals to use the same procedure so that the mode of administration does not introduce bias into the study. One-on-one interviews are useful for asking sensitive questions and enabling interviewees to ask questions or provide comments that go beyond the initial questions. Interviews lead to a high response rate because researchers schedule the interviews in advance and sample participants typically feel obligated to complete the interview. However, one-on-one interviews do not protect the anonymity of the participant as questionnaires do. Researchers may also prejudice participant answers, knowingly or unknowingly, through either comments or body language. Also, not all interviewees are comfortable disclosing information about themselves during the interview.

### *Focus Group Interviews*

An alternative to a one-on-one interview is to administer a survey to a focus group. In quantitative **focus group interviews in survey research**, the researcher locates or develops a survey instrument, convenes a small group of people (typically a group of 4 to 6) who can answer the questions, and records their comments on the instrument. For example, this group might consist of parents who evaluate a new math or science curriculum in a school. Alternatively, international students provide views about cultural integration into an American university setting. During processes such as these, researchers ask the group questions on an instrument and record or take notes on the group conversation. Focus groups provide for interaction among interviewees, collection of extensive data, and participation by all individuals in a group (Krueger, 1994). A disadvantage of focus group interviews is that they require the researcher to find consensus on questions so one score can be marked for all individuals in the group. In addition, some individuals may dominate the conversation, leading to responses that do not reflect the consensus of the group.

### *Telephone Interviews*

In **telephone interview surveys**, the researcher records the participants' comments to questions on instruments over the telephone. The researcher develops or locates an instrument, obtains the telephone numbers of participants in the sample, conducts the telephone calls, and asks the participants to answer questions on the instrument. Telephone interviews allow the researcher easy access to interviewees who are geographically dispersed. However, the researcher cannot see any nonverbal communication on the part of the participant, and people often dislike telephone contacts because of their prior personal

experiences with calls from survey firms asking for information. Assume that you advise Maria on the type of survey data collection she should use to study factors that explain why students hold positive attitudes toward weapon possession in the school. Should she use (a) a mailed questionnaire, (b) an electronic questionnaire, (c) one-on-one interviews, (d) focus group interviews, or (e) telephone interviews?

Write down your answer and provide a rationale for your choice, then look at my answer below. I would advise Maria to consider the sensitive nature of her study and realize that students need to have their anonymity protected. A mailed questionnaire would provide the greatest protection to students, and Maria could say that she will not identify individuals with survey responses in her report. To keep track of students who respond to the survey, she might enclose a postcard with a student identification number on it that the students return separately from their survey.

### **Instrument Design**

Designing good survey instruments is a challenging and complex process. You should first consider whether a survey instrument is available to measure your variables. You might also consider modifying an existing instrument. If neither of these approaches will work, design your own instrument. When survey researchers design an instrument for data collection, they typically perform the following steps:

1. *They write different types of questions.* These include personal, attitudinal, and behavioral questions; sensitive questions; and closed- and open-ended questions.
2. *They use strategies for good question construction.* This includes using clear language, making sure the answer options do not overlap, and posing questions that are applicable to all participants.
3. *They perform a pilot test of the questions.* This consists of administering the instrument to a small number of individuals and making changes based on their feedback.

### ***Personal, Attitudinal, and Behavioral Questions***

Consider the general forms of the types of *content* that questions might take on a survey instrument. There are three popular types. *Background* questions or *demographic* questions assess the personal characteristics of individuals in your sample. These questions can be easy (i.e., gender) or difficult to answer (i.e., level of income). Here are some examples of background questions:

What is your age? \_\_\_\_\_

How many years of teaching have you completed? (end of school year) \_\_\_\_\_

A second group of questions relates to obtaining individual *attitudes or opinions* from individuals in your sample. For example, you might ask:

How much do you agree or disagree with this statement:

Most days I am enthusiastic about being a student.

\_\_\_\_\_ Strongly agree

\_\_\_\_\_ Agree

\_\_\_\_\_ Neither agree or disagree

\_\_\_\_\_ Disagree

\_\_\_\_\_ Strongly disagree

A third group of questions can solicit information about the actual *behavior* of individuals in the sample. For example:

Did you take a semester off during any of your 4 years of college?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

### ***Sensitive Questions***

Some surveys contain sensitive questions that must be developed and used with care.

Sensitive questions might have to do with:

- ◆ Drug and alcohol use (e.g., use of cocaine)
- ◆ Mental health issues (e.g., paranoid behavior)

Depending on your topic, you may decide to use sensitive questions. If the questions are not tactfully stated, individuals may either over- or underrepresent their views, leading to bias in responses. Several strategies can be used to provide good questions (Neuman, 2000). You might include a sensitive question late in the survey, after the individual has “warmed up” by answering neutral questions and has established some rapport with the researcher. Also, initial comments can lead the respondent into the question:

Instead of: Have you ever used marijuana? You might ask: In past surveys, many men have reported that at some point in their lives they have used marijuana. This could have happened before adolescence, during adolescence, or as an adult. Have you ever smoked marijuana?

### ***Open- and Closed-Ended Questions***

Surveys consist mainly of closed-ended questions. In **closed-ended questions in surveys**, the researcher poses a question and provides preset response options for the participant. A closed-ended question might be: There are many reasons why adults wish to

get more education. What is your most important reason for coming to adult basic education classes? (Check one.)

\_\_\_\_\_ To be able to help my children with their schoolwork

\_\_\_\_\_ To get a better job

\_\_\_\_\_ To improve myself

\_\_\_\_\_ To get a high school equivalency diploma

Here, the author provides a question followed by a limited number of response options.

These options need to be mutually exclusive, or distinct from each other, and include the typical responses an individual might provide.

Closed-ended questions such as the example above are practical because all individuals will answer the question using the response options provided. This enables a researcher to conveniently compare responses. They are useful for sensitive questions because participants might feel more comfortable knowing the parameters of response options. Closed-ended questions also provide a means for coding responses or assigning a numeric value and statistically analyzing the data. At times, however, you may want to probe a little deeper and explore the many possibilities that individuals might create for a question. In this case, open-ended questions

are best. **Open-ended questions in a survey** are questions for which researchers do not provide the response options; the participants provide their own responses to questions.

For example:

Why are you attending adult education classes?

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In an open-ended question, the participant supplies an answer. This question does not constrain individual responses. It is ideal when the researcher does not know the response possibilities and wants to explore the options. Further, open-ended questions allow participants to create responses within their cultural and social experiences instead of the researcher's experiences (Neuman, 2000). However, open-ended questions have drawbacks of coding and analysis. The researcher needs to categorize the responses into themes, a process that may take considerable time. Open-ended responses require transforming word responses into numbers (e.g., participants mentioned "getting a better job" 15 times). One further option is the use of **semi-closed-ended questions in a survey**. This type of question has all the advantages of open- and closed-ended questions. The technique is to ask a closed-

ended question and then ask for additional responses in an open-ended question. For example: There are many reasons why adults wish to further their education. What is your most important reason for coming to adult basic education classes? (Check one.)

\_\_\_\_\_ To be able to help my children with their schoolwork

\_\_\_\_\_ To get a better job

\_\_\_\_\_ To improve myself

\_\_\_\_\_ To get a high school equivalency diploma

\_\_\_\_\_ Other (please comment) \_\_\_\_\_

This question provides the typical response categories to the question, but it also allows respondents to write in answers that may not fit the response choices. While it also provides limited open-ended information to encourage responses, it does not overburden the researcher with information that needs to be coded.

### ***Question Construction***

As you select an instrument or develop one of your own, pay attention to the quality of the questions. Using good questions helps participants feel that they understand the question and can provide meaningful answers. Good questions are clear and unambiguous, and they do not confuse the participants. They also show respect for the participant by being sensitive to gender, class, and cultural needs of participants. For example, in the community needs survey mentioned earlier (Batsche et al., 1999), the researchers used the term *Hispanic* out of respect for what the Spanish-monolingual residents preferred to call themselves. By using good questions, you are encouraging the participant to complete the instrument. When you construct questions for a survey questionnaire or interview, fit the questions to answers, include suitable response options, and do not overlap. Next, determine the problem. Then, read the improved question. When you write questions (or review those provided by others), you might assess them in terms of whether your question is clear, has a clear response, and whether your questions are within the participants' ability to answer. A review of these potential question construction problems and some solutions will provide guidance for survey development.

◆ *The question is unclear.* This usually occurs because words are vague or imprecise. Identify the unclear or vague words and replace them with words understood by participants in the study.

◆ *There are multiple questions.* Here, the question actually contains two or more questions, called a *double-* or *triple-barreled question*. Reduce the multiple questions to a single question.

- ◆ *The question is wordy.* When the question is too long, cut out unnecessary words to simplify and shorten the question. Look for excessive use of prepositions (e.g., more than three) or qualifying statements that lengthen the question.
- ◆ *The question is negatively worded or wordy.* If the question contains one or more negatives, such as “should not,” the meaning becomes unclear. Also, reword the question if it leads the participants to one particular stance or another (e.g., using the word “pro-life”). Restate or reword the question to eliminate negative connotations or leading words.
- ◆ *The question includes jargon.* Jargon may not be familiar to all participants in a study. Eliminate the jargon and use words familiar to all participants.
- ◆ *There are overlapping responses.* This may lead to confusion when answering a question. Make sure that the response options do not overlap by creating distinct options.
- ◆ *There are unbalanced response options.* In this case, the responses may be unbalanced in terms of naturally occurring intervals. Response options may start with an “importance” word (e.g., “very important”) and end with an “extent” word (e.g., “to a little extent”), rather than a matching adjective (e.g., “not important”). Decide on a single response option and use it consistently for all response categories for a question.
- ◆ *There is a mismatch between the question and the answers.* The responses may not match the “action” word used in the question. Identify the verb or adjective in the question that will be the basis for the response options and create options using this word. (E.g., if the question says “to what extent,” the answer will say “a great extent.”).
- ◆ *The question includes overly technical language.* When this occurs, the respondent may not have the level of understanding needed to respond to the question. Simplify the question so that all individuals will know the meaning of the words and can respond to the question.
- ◆ *Not all questions are applicable to all participants.* If some participants cannot answer the question, include “branching” or “contingency questions.” These questions follow the original question and provide options to include all participants.

### ***Pilot Testing the Questions***

After good questions have been developed using principles of question construction, a researcher pilot tests the questions. This helps determine that the individuals in the sample are capable of completing the survey and that they can understand the questions. A **pilot test** of a questionnaire or interview survey is a procedure in which a researcher makes changes in an instrument based on feedback from a small number of individuals who complete and evaluate the instrument. The participants in the pilot test provide written



comments directly on the survey, and the researcher modifies or changes the survey to reflect those concerns. Because the pilot group provides feedback on the questionnaire, you exclude them from the final sample for the study.

For example, a survey of 100 middle school students' attitudes toward school might begin with a pilot test of an instrument with 50 questions. In this pilot test, the researcher selects 15 students to complete the instrument. The investigator then asks them to mark any problems on the survey, such as poorly worded questions, responses that do not make sense, or if it takes an excessive amount of time to complete the instrument. Based on student feedback, the researcher then revises the instrument before sending it out to the sample in the study.

### **Response Rate**

Survey researchers seek high response rates from participants in a study so that they can have confidence in generalizing the results to the population under study. When using interviews, the response rate is high because individuals interviewed typically consent to the interview in advance. However, when questionnaires are used, the number of responses returned (through mail or electronically) will vary. In either case, survey researchers place emphasis on obtaining a high response rate to their questionnaire or interview. On the instruments that are returned, the survey researcher is also concerned about whether the returned responses are biased. Even a small return rate may not be biased and be acceptable in survey research. Although response rate is important, bias is a larger concern than return rate because if the returned responses are biased, the database will be inadequate, regardless of the return rate.

### ***Response Rates for Mailed Questionnaires***

As mentioned earlier, a high response rate creates a stronger claim in generalizing results from the sample to the population. A **response return rate** is the percentage of questionnaires that participants return to the researcher. Many survey studies in leading educational journals report a response rate of 50% or better. However, this rate will fluctuate depending on proper notification, adequate follow-up procedures, respondent interest in the study, the quality of the instrument, and use of incentives.

Researchers use several strategies to encourage high return rates. One is to *pre-notify participants* that they will receive a questionnaire. Individuals receive an introductory letter asking them to participate in the study and telling them that they will receive a survey in 2 weeks. Another strategy is to use *good follow-up procedures*. Figure shows a three-step procedure that might be used.

1. Mail out the original questionnaire.
2. Follow it 2 weeks later with a second questionnaire to the individuals who have not responded (called *non-respondents*).
3. After another 2 weeks, send a postcard to the non-respondents, reminding them to complete the questionnaire.

Although you might take additional steps, this three-step process should help you attain a good return rate. The time for each notification will vary, of course, depending on the study. For most questionnaires mailed within the United States, however, this format should allow the researcher to conclude data collection in 6 weeks.

Another way to encourage a high response rate is to *study a problem of interest* to the population under study. If individuals in the sample are interested in the issue, they will be more apt to complete the survey. Also, *using a brief instrument* usually encourages a high return rate.

Typically, a three-page instrument will take less than 15 minutes to complete. A final strategy is to *consider the use of incentives* to encourage individuals to return the instrument.

Studies show mixed results on the impact of incentives, even small ones like giving enough money for a cup of coffee (Babbie, 1998). As a researcher, you need to weigh the costs of incentives against their potential help with returns. In many cases, survey researchers combine many of the strategies mentioned so far—prenotification, follow-up procedures, and clear instrument constructions—with modest incentives to encourage high returns.

### ***Response Bias***

What do you do if your response rate is low? You might proceed with your study and report a limitation of a low response rate; extend the time to collect data to gather more responses; or report that your responses, although low, are representative of the sample (and population). This last option is response bias. With a low return rate, the key issue is not necessarily how many people returned an instrument, but whether bias exists in those who *did* return it. **Response bias** occurs in survey research when the responses do not accurately reflect the views of the sample and the population. For example, the individuals who return a questionnaire may be overly negative or positive. Thus, survey researchers monitor their returns to assess whether they display bias. We call this approach wave analysis. **Wave analysis** is a procedure to check for response bias in which investigators group returns by intervals (e.g., each week) and check to see if the answers to a few select questions change from the first week to the final week in a study, indicating response bias. Individuals responding in the final week of survey administration are as close to nonreturns or no respondents as possible. However, their responses should be similar (i.e., and not biased) to

those returning instruments in the first week. If they differ, researchers report that the potential for bias exists, and the potential that the participants studied may not be representative of the sample and the population.

### **HOW DO YOU CONSTRUCT AND ANALYZE A MAILED QUESTIONNAIRE?**

Because of the popularity of mailed questionnaires for student research projects, they deserve special attention. We will focus on three aspects of using mailed questionnaires:

- ◆ A cover letter to invite participants to complete the questionnaire
  - ◆ The form and construction of the questionnaire
  - ◆ Statistical procedures typically used to analyze data from a mailed questionnaire
- We use a mailed questionnaire from VanHorn-Grassmeyer (1998) as a specific example. VanHorn-Grassmeyer studied 119 individuals new to the field of student affairs (e.g., student activity leaders) in colleges and universities in the central United States and Canada. Her purpose was to explore the perceptions, attitudes, and behaviors of professionals regarding their professional practices. As one aspect of her data collection, she mailed a self-designed questionnaire to the participants. This instrument consisted of five parts:

1. A cover letter
2. Closed-ended questions asking participants about their background (i.e., demographic questions)
3. Closed-ended questions addressing practices or behaviors (e.g., “I claim responsibility when I’ve made a ‘bad call’ professionally”) and attitudes (e.g., “I benefit from collaborative reflection with colleagues”)
4. Open-ended questions permitting respondents to add their perceptions (e.g., “In your opinion, what defines a competent student affairs professional?”)
5. Closing instructions thanking the participant for taking part in the study. This cover letter and mailed questionnaire comprised a five-page packet, which can be seen in Figures 12.5 and 12.6 as they were originally reported in VanHorn-Grassmeyer’s dissertation. Inspecting these examples can provide useful ideas for designing your own cover letter and questionnaire.

## The Cover Letter

A major component of a mailed questionnaire consists of a cover letter inviting the participant to take part in the study and to complete the instrument. When we inspect the cover letter in Figure 12.5, we find these major elements:

- ◆ *Importance of participant.* To encourage individuals to complete the questionnaire, they need to know why they have been sent the instrument. The first few sentences indicate the importance of recipients and the value of their response. It is often helpful to begin a cover letter with this statement, as illustrated in this example.
- ◆ *Purpose of the study.* Include a statement indicating, succinctly, the intent or purpose of the study. This statement not only informs the participant about the nature of the study, but it also fulfills an important “informed consent” provision of identifying the purpose of the study for participants.
- ◆ *Assurances of confidentiality.* Also, to comply with informed consent and to be ethical, the investigator assures the individual of confidentiality (i.e., not identifying individuals specifically).
- ◆ *Sponsorship.* The cover letter includes the advisor’s name as well as the institution where VanHorn-Grassmeyer works. In addition, write the letter on letterhead stationery to add additional sponsorship.
- ◆ *Completion time and returns.* Add to the letter an estimate of the amount of time the survey will take to be completed and the procedure for returning the instrument to the author.

## Overall Questionnaire Construction

This instrument contains features of good questionnaire construction. It is short and encourages a busy professional to return it. The instrument begins with demographic or personal questions that respondents can easily answer, and in the process of answering them, they become committed to completing the form. For variety, the author used different types of closed ended questions, from checking the appropriate response (e.g., “years of employment”) to an extent of agreement scale (“strongly disagree” to “strongly agree”), to a frequency scale (“never” to “often”). The questionnaire also contains open-ended items to encourage participants to elaborate on their experiences and definitions (e.g., “What defines a competent student affairs professional?”). It also contains a pleasing layout with much “white space” between the questions and the use of one scale (e.g., “strongly disagree” to “strongly agree”) for multiple questions so that participants do not repeat responses. It also includes closing instructions thanking the respondent for participating in the study.

## **Data Analysis of a Research Questionnaire**

When researchers compare groups or relate variables, their statistical analysis of questionnaire data extends beyond simple descriptive analysis. These steps describe the process typically used for analyzing mailed questionnaire data. The figure includes reporting response rate and checking for bias in responses. The researcher also descriptively reports aggregate responses to each item on the questionnaire. This process helps to discern general patterns of responses and variation (variance and standard deviation) in results. Typically, researchers using mailed questionnaires also correlate all of the questions and attempt to build scales that reflect multiple questions. As with all instruments, scores need to be reliable and valid, and statistical procedures such as internal consistency checks (e.g., the alpha reliability statistic) and validity (e.g., factor analysis) represent means for making these assessments. Finally, the researcher tests hypotheses or research questions using inferential statistics.

## **HOW DO YOU DESIGN AND CONDUCT AN INTERVIEW SURVEY?**

Instead of a mailed survey, researchers might collect quantitative data using an interview survey instrument. In using this form of data collection, we need to know the stance of the interviewer, recognize the importance of training interviewers (if there is more than one), and know the general steps in administering this form of data collection. To understand this process, we will use a telephone interview as an example.

### **Stance of the Interviewer**

Researchers often use interview surveys less frequently than mailed questionnaires in educational research. Interview procedures often involve the need for the researcher to establish rapport with and gain the cooperation of the interviewee. Rapport builds through requests for an interview in the cover letter. During an interview, the researcher should remain neutral and should not share opinions (e.g., “I think that budget cutting is a good idea, too”). It is also important to use a positive tone of questioning and to have a neutral appearance.

### **Training of Interviewers**

If more than one interviewer is involved in a research project, each person needs training. This training might consist of a role-playing demonstration by an experienced researcher and a practice interview by the individual researchers who will be conducting the interviews. It is important during this training for interviewers to become familiar with the questions so that they will know if the responses match the questions. Training also covers potential

interruptions during interviews or questions interviewees might have about the interview.

Problems can arise during an interview, such as when the interviewer:

- ◆ Does not ask the questions in order (e.g., Question 3 is asked before Question 2)
- ◆ Intentionally subverts the process because of disinterest in the topic (e.g., the interviewer does not take time to probe on questions)
- ◆ Brings certain expectations to the interview about how the individuals will answer (e.g., the interviewer prefaces the question with “I think you already know the answer to this . . .”)
- ◆ Dresses or appears inappropriately for the interview (e.g., wears shorts when the interviewee is dressed in a suit)
- ◆ Is disrespectful by not using names the interviewee wants to be called (e.g., referring to the individual as “Latino” instead of “Hispanic”)

### **Steps in Interviewing**

The steps in conducting an interview involve obtaining an interview survey to use and training individual interviewers (if more than one person will be conducting the interviews). Then the researcher gains access to the participants through a formal invitation, such as a cover letter, and establishes a time and place to conduct the interview. During the interview, the survey researcher asks questions, indicates the response options to questions, and records participant answers. The pace of the interview is set to be comfortable for the interviewee. When asking open-ended questions, the interviewer writes down answers to the questions (or tape-records them). The interview ends with the researcher thanking the individual for the interview and telling the participant what the next step will be in the study. After the interview, the researcher may want to write down comments that help explain the data, such as the demeanor of the interviewee or specifics about the situation (e.g., “It was so noisy I could hardly hear at times”). The interviewer might also record any personal feelings about the interview (e.g., “I felt uneasy during this interview and perhaps did not probe as much as I could have”).

### **A Telephone Interview Guide**

An example of a telephone interview guide is shown in Figure 12.8. This interview guide was for an interview with 200 academic department chairpersons surveyed to understand how chairpersons assisted faculty in their units (Creswell et al., 1990). Consisting of 25 questions, each interview lasted, on average, about 45 minutes, and all interviews were audiotaped. Six interviewers assisted in the process of data collection, and their training consisted of a demonstration and a practice interview. The researchers constructed this guide to include:

- ◆ Introductory remarks to help establish rapport and direction for the interview (e.g., the amount of time required)
- ◆ Clearly marked boxes with instructions for each question in the interview so that each interviewer on the research team would ask the same question
- ◆ Closed-ended response options for each question, with space between questions permitting the interviewer to write in additional comments
- ◆ Numbers in parentheses to indicate the column number for coding the response into a data grid of a computer file for statistical analysis

## WHAT ARE THE STEPS IN CONDUCTING SURVEY RESEARCH?

The steps in the process of conducting survey research follow the general process of research. Survey steps, however, address primarily the procedures for collecting data, analyzing data, and writing the final report.

### Step 1. Decide if a Survey Is the Best Design to Use

You need to decide whether survey research is the best design to use in the study. Surveys help describe the trends in a population or describe the relationship among variables or compare groups. Instances where surveys are most suitable are to assess trends or characteristics of a population; learn about individual attitudes, opinions, beliefs, and practices; evaluate the success or effectiveness of a program; or identify the needs of a community. There are several advantages to using surveys. You can administer them in a short time, they are economical as a means of data collection, and they can reach a geographically dispersed population. Further, you can canvass the participants anonymously, without biasing their responses. However, survey data is self-reported information, reporting only what people think rather than what they do. Sometimes the response rates are low and researchers cannot make claims about the representativeness of the results to the population. As mentioned earlier, surveys do not control for many variables that might explain the relationship between the independent and dependent variables, and they do not provide participants flexibility in responding to questions (unless open-ended questions are included).

### Step 2. Identify the Research Questions or Hypotheses

You can address both research questions and hypotheses in a survey design. Surveys lend themselves to hypothesis testing because you will be studying a sample to draw inferences to a population. Forms of research questions or hypotheses are those that:

- ◆ Describe the characteristics or trends of a population of people, such as the frequency of tobacco use among male high school students

- ◆ Compare groups in terms of specific attributes, such as a comparison of teachers and administrators about attitudes toward “in-service” learning days
- ◆ Relate two or more variables, such as a survey of teachers to relate “burnout” to number of years of teaching

### **Step 3. Identify the Population, the Sampling Frame, and the Sample**

The process of survey research begins with identifying the population. This step requires defining the population, determining the number of people in it, and assessing whether you can obtain a list of names (i.e., the sampling frame) for the sample. Also, the population may need to be stratified before sampling, so select characteristics of the population (e.g., males and females) are represented in the sample. Once you have identified the target population and compiled a list of its members, you can select the sample, preferably using random sampling procedures. You will need to identify an adequate sample size, using a sampling error formula.

### **Step 4. Determine the Survey Design and Data Collection Procedures**

The researcher must also determine if the survey study will be cross-sectional or longitudinal. The decision to use a longitudinal or cross-sectional design relates to the nature of the problem studied, access to participants, and the time available to the researchers for data collection. For example, learning about the longitudinal development of adolescent social skills in schools requires following adolescents over time and devoting extensive time to data collection. In contrast, examining parents’ attitudes toward discipline in schools requires a cross-sectional study at one point in time to assess attitudes immediately and quickly. Consider also whether data collection will be based on questionnaires (mailed or electronic) or interviews (individual, focus group, or telephone), and weigh the advantages and disadvantages of each form.

### **Step 5. Develop or Locate an Instrument**

You need an instrument to collect or measure the variables in a study. It is easier to locate an instrument than to develop one. Standards of reliability and construct validity need to be applied to scores from existing instruments before you select them for use. If a study addresses only a few variables, researchers can design their own instruments. A check for the reliability and validity of scores from this instrument during data analysis is most important.

### **Step 6. Administer the Instrument**

This step is perhaps the most time-consuming phase of survey research. It involves seeking and obtaining permission to conduct the survey and using procedures for data gathering, such as training interviewers or preparing questionnaires for mailing. It requires continually



following up to obtain a high response rate, checking for response bias if questionnaires are used, and preparing the data for analysis by coding the information from the instruments into a computer file.

#### **Step 7. Analyze the Data to Address the Research Questions or Hypotheses**

The data analysis procedures will reflect the types of research questions or hypotheses the researcher plans to address in the study. Analysis consists of noting response rates, checking for response bias, conducting descriptive analysis of all items, and then answering descriptive questions. It might also involve testing hypotheses or research questions using inferential statistics.

#### **Step 8. Write the Report**

You should write the survey study using a standard quantitative structure that consists of an introduction, the review of the literature, the methods, the results, and the discussion.

Specify in the “Methods” section of the study detailed information about the survey procedures. Include in the “Discussion” section comments about the generalizability of the results to the population.

