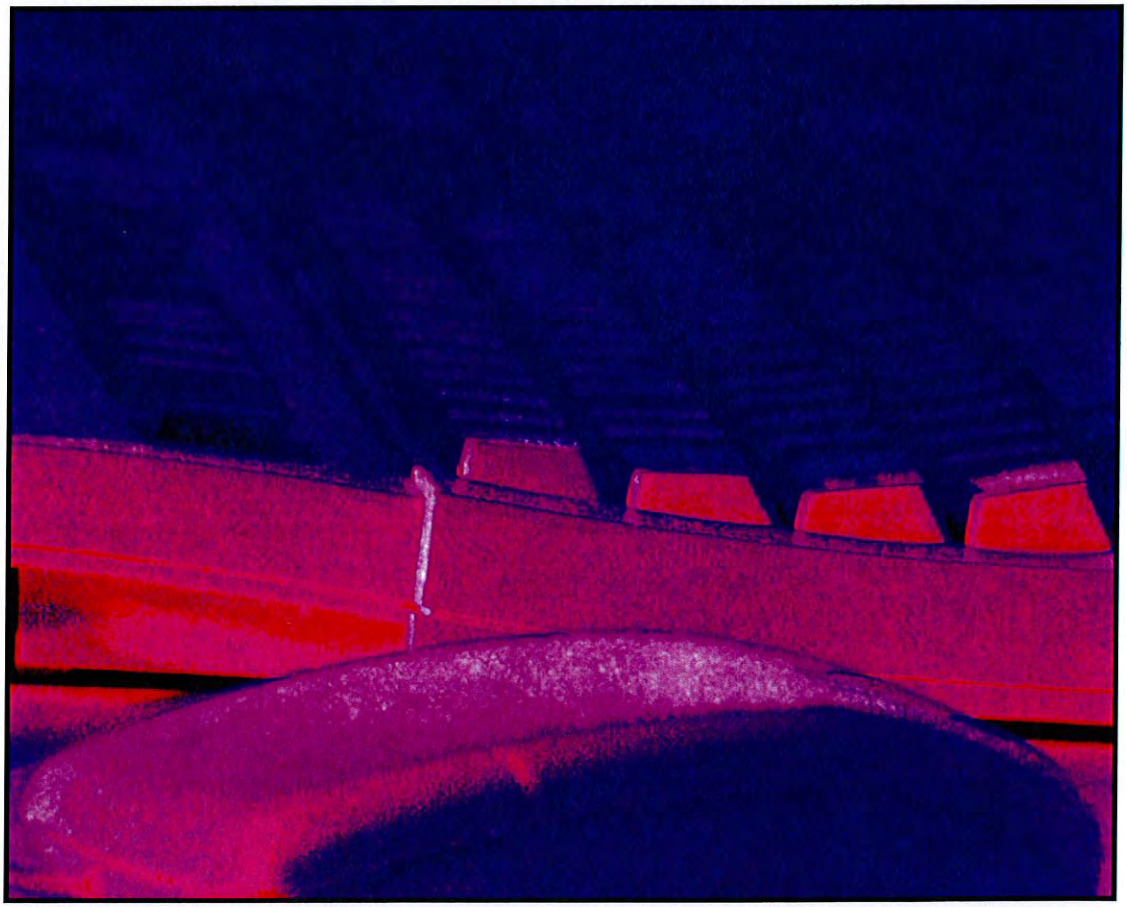
HANDBOOK OF RESEARCH ON

E-Learning Applications for Career and Technical Education

Technologies for Vocational Training



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Technologies for Vocational Training

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Chapter XLI
Conducting Survey Research in Education

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ABSTRACT

Survey research is prevalent among many professional fields. Both cost effective and time efficient, this method of research provides insight into the attitudes, thoughts, and opinions of populations. Because there are several types of survey research designs and data collection instruments, the researcher has the flexibility to determine which methods will work best for his or her particular study. Regardless of the method, the researcher must carefully select an excising instrument or construct the data collection instrument, as this is the key to a successful survey research study. This chapter discusses and defines survey research, provides the basic structure for conducting such research, describes the challenges surrounding survey research, provides recommendations when developing survey research studies, and presents information regarding future trends associated with survey research.

INTRODUCTION

From the Gallup polls to the internet, surveys have become more and more popular in finding out what people think about certain topics and issues. As noted by Berends (2006), survey research can be used for "monitoring important trends in society, testing our theoretical understanding of social processes, providing information to firms through market research, guiding politicians through polling of public opinion on key political issues and strategies, and providing key indicators of what is going on in our society" (p. 623). Even more important during an election, polls demonstrate the vital significance of determining people's beliefs, attitudes, and opinions. Although many people understand the importance of such large-scale surveys, this type of information-seeking is also valuable in smaller-scale research designs. Frequently used in education, surveys provide constructive feedback to educational administrators regarding teacher job satisfaction,

burnout, educational climate, parental attitudes towards school board decisions, student opinions regarding class options, and much more beneficial information. In doing so, changes can be made and ideas can be adapted to increase the success of schools and educational programs.

The purpose of this chapter is to discuss the importance of survey research as a practical and effective method of data exploration. Specifically, this chapter will provide information regarding the basic components of survey research, including the steps involved in conducting this type of research, the controversies and issues surrounding survey research, as well as solutions and recommendations to counter such issues. Finally, this paper will discuss trends and technologies driving the future of survey research.

BACKGROUND OF SURVEY RESEARCH

What is Survey Research?

Ideal for use in education, survey research is used to gather information about population groups to "learn about their characteristics, opinions, attitudes, or previous experiences" (Leedy & Ormrod, 2005, p. 183). This is done by administering a questionnaire, either written or orally, to a group of respondents, and the responses to the questions form the data for the study (Berends, 2006; Best & Kahn, 2003; Fraenkel & Wallen, 2009; Gay, Mills, & Airasian, 2009; Leedy & Ormrod, 2005; McMillan & Schumacher, 2006; Mertler & Charles, 2008; Polit & Beck, 2006). Gay et al. (2009) define the questionnaire, or survey, as "an instrument to collect data that describes one or more characteristics of a specific population" (p. 175). Some researchers may be able to work with the entire population, which is referred to as a census (Berends, 2006; Gay et al.; Mertler & Charles, 2008). However, most survey research is conducted with a sample of respondents from the target population. If proper sampling techniques are employed, the researcher can generalize the attitudes and ideas from the sample to the larger population (Fraenkel & Wallen; Gay et al.; Leedy & Ormrod; McMillan & Schumacher).

Why Do We Conduct Survey Research?

As previously mentioned, survey research is used to gain insight into the thoughts, ideas, opinions, and attitudes of a population. It is descriptive in nature, so unlike experimental designs, the researcher does not manipulate variables (Burns & Grove, 2005). Instead, the survey researcher describes and draws conclusions from frequency counts and other types of analysis. Although it is descriptive research, survey research may serve as a stimulus for more in depth analytical research. Many correlational and causal-comparative studies include survey research as part of the data collection process (Burns & Grove; Mertler & Charles, 2008). Researchers turn to survey research because it offers a flexible design and is appropriate for gathering a large amount of data from many different types and sizes of populations (Mertler & Charles; McMillan & Schumacher, 2006; Polit & Beck, 2006;). Finally, survey research is ideal for working with large and/or geographically dispersed populations when other methods of research are not always feasible (Best & Kahn, 2003; O'Sullivan, Rassel, & Berner, 2003; Rubin & Babbie, 2008).

Comparison of Different Survey Methods

Survey researchers employ two different methods of research: cross-sectional and longitudinal. These two methods vary dramatically in their types of samples and data collection procedures. Each method has advantages and disadvantages, and it is up to the researcher to select the design that works best for the study at hand.

Cross-Sectional Designs

Researchers using a cross-sectional research design will administer the survey to one or more samples one time only (Fraenkel & Wallen, 2009; Gay et al., 2009; Mertler & Charles, 2008; O'Sullivan et al., 2003). Because of this characteristic, data can be gathered quickly (Gay et al.). O'Sullivan et al. assert that these designs "are particularly suited for studies that involve collecting data: on many variables...from a large group of subjects...from subjects who are dispersed geographically" (p. 26). Unfortunately, however, cross-sectional designs may only present a picture of the target population at the time that the survey was administered. This method is not conducive to in-depth studies that attempt to see changes or trends in variables over time (Gay et al.; O'Sullivan et al,). In addition, because there is normally no relationships established between the researcher and the respondent prior to the survey administration, response rates are often low (O'Sullivan et al.). Thus, the researcher must take time and care when designing and administering the survey.

Longitudinal Designs

Unlike cross-sectional designs, longitudinal research involves collecting data from respondents on more than one occasion (Fraenkel & Wallen, 2009; Gay et al., 2009; Mertler & Charles, 2008; O'Sullivan et al., 2003). The purpose of this method is to see how the target population respondents' attitudes and opinions change and develop over time (Fraenkel & Wallen; Gay et al., 2009; O'Sullivan et al.). Gay et al. describe four subgroups of longitudinal research: trend surveys, cohort surveys, panel surveys, and follow-up surveys. While all of them gather data at different points in time, the differences in these studies lie in the study's participants. *Trend studies* gather data from a particular population characterized by a specific variable, such as education level. For example, a researcher may look at the opinions of high school dropouts during various years. Researchers conducting cohort studies randomly sample the same population each time data is collected. A *cohort study* may investigate the attitudes of high school principals who began their positions in 2009. The *panel study* follows the exact same group of participants over time, and the follow up study reconnects at a later time with respondents who participated in the survey previously. While *longitudinal research* may provide valuable information regarding population trends, it is often hindered by large rates of attrition, and it is sometimes difficult to get participants to agree to long-term involvement in the study (Gay et al.; O'Sullivan et al.).

Basic Components of Survey Research

Survey research designs follow the same path that other types of research follow. While subtopics and titles may differ according to the preferences of the researcher, the following list details the basic components of survey research:

1. Identify the problem to be studied.
2. Review the literature related to the topic of interest.
3. Define the statement of the problem and purpose of the study.
4. Select the population, sampling frame, and sample.
5. Choose instruments or develop and pilot test instruments.
6. Gather data
   a. Develop cover letter.
   b. Determine data collection method (mail, electronic, telephone, personal interviews, direct administration)
   c. Handle nonrespondents via follow-up procedures.
7. Tabulate responses
8. Analyze results
9. Present findings

Identification of Topic

As in other types of research, the first step in conducting survey research is to identify the topic of the study. Fraenkel and Wallen (2009) suggest that survey researchers select a topic that will be of interest to the respondents so that they will be more likely to respond to the survey, increasing the response rate. Respondents are less likely to respond to "questionnaires dealing with trivial issues" (Gay et al., 2009, p. 178). When defining the topic, the researcher needs to develop a comprehensive set of research objectives that will be the focus of the study, and thus the survey. The survey questions should mimic the objectives of the study. Furthermore, Fraenkel and Wallen also recommend that when the researcher is developing the survey and study questions, he or she should use a funnel approach, going from general to specific. Gay et al. provide further guidelines for this section of the research process. They suggest that researchers describe the "specific aspects of the topic, as well as the kind of questions to be formulated" (p. 178).

Review of Literature

The review of literature is an important step in the preparation process of any research study. Current literature provides a starting point for researchers, detailing previous studies and results (Mertler & Charles, 2008). Researchers can avoid duplicating existing research, as well as modify past studies for their own purposes. In survey research, the review of literature is especially helpful in assisting the researcher with developing the questionnaire or interview questions, as well as giving the researcher a direction when developing the research design (Berends, 2006; Mertler & Charles).

Defining Statement of Problem and Purpose of Study

In survey research, it is crucial to effectively state the research problem and the purpose of the study. As previously mentioned, the topic of the study is critical in survey research, as the subject matter should be exciting enough to produce a high response rate (Fraenkel & Wallen, 2009; Gay et al., 2009). After deciding on the appropriate topic, the researcher should specifically and clearly describe the objectives that will be addressed through the study (Fraenkel & Wallen; Gay et al.; McMillan & Schumacher, 2006). He or she should discuss the types of questions that will be asked on the survey, making sure that each question directly relates to one of the study objectives (Fraenkel & Wallen; Gay et al.). Finally, the researcher must explain the intention of the study. This is the section that answers the "*So what?*" question, and the researcher needs to adequately justify the reasons for conducting the study.

Select Population, Sampling Frame, and Sample

After determining the focus of the study, the researcher must next identify the target population for the study. The *target population* is the larger group from which a sample will be taken, such as high school students living in East Tennessee (Fraenkel & Wallen, 2009). The resources available for the study will be a large factor in determining the target population, as will the data collection methods that will be used. More time, money, and staff will be needed to survey a large demographic area, especially if the researcher is planning to use personal or telephone interviews as the survey medium.

Once the target population has been decided, the researcher will need to select a sample from the population. First, the researcher must decide upon a *sampling frame*, which is the medium from which he or she will take the sample. Using

the above example of East Tennessee high school students, the researcher may choose the high school registration documents as the sampling frame. The researcher must ensure, however, that the sampling frame does not leave out potential participants or introduce bias (Leedy & Ormrod, 2005). For example, if the researcher only used public high school registration materials, students attending private high schools would not be included. In order to adequately generalize results from the study, the sample must be representative of the group, and conducting a random sample is the best method to ensure this (Berends, 2006; Gay et al., 2009; Leedy & Ormrod; Mertler & Charles, 2008). Because there are many types of random sampling methods, the researcher must determine which method is most appropriate for his or her study (Leedy & Ormrod; McMillan & Schumacher, 2006). When dealing with large, geographically dispersed populations, Leedy and Ormrod suggest dividing the population into smaller segments prior to conducting the sample. If necessary, the subdivisions may be split into even smaller areas until the sample is manageable. In contrast, if the target population is small enough, the researcher may decide to use every individual in the population, which is called a census rather than a sample (Berends, 2006).

Choose Instruments or Develop Instruments and Pilot Test

Once the sample has been selected, the researcher needs to decide upon a survey instrument. While some researchers may choose to use an instrument that has already been constructed, some survey researchers develop their own instrument or instruments. Because this instrument is the heart of the study, the researcher must ensure that it is constructed as flawlessly as possible. No matter what method of data collection is used, the researcher should relate every question to a study objective, group questions into categories when possible, develop simple questions that all potential respondents will understand, and include clear instructions (Berends, 2006; Fraenkel & Wallen, 2009; Gay et al., 2009; Leedy & Ormrod, 2005; Mertler & Charles, 2008). The researcher must also determine the types of questions to be asked. Mertler and Charles outline the basic types of questions, including demographic, knowledge, attitudinal, and behavioral, as well as open-ended and close-ended. The types of questions to be asked depend upon the specific study. Some suggest that the researcher limit the number of open-ended questions, as close-ended questions are both quicker and easier to respond to, as well as easier to code for analyzing purposes (Gay et al.). Fraenkel and Wallen suggest that when researchers are developing the questions, they should ask themselves the following (p. 396):

1. Is this a question that can be asked exactly the way it is written?
2. Is this a question that will mean the same thing to everyone?
3. Is this a question that people can answer?
4. Is this a question that people will be willing to answer given the data collection procedures?

Furthermore, researchers should ensure that questions do not lead the respondents to answer in certain directions (Gay et al.; Leedy & Ormrod; Mertler & Charles).

There are some other considerations to make depending on the type of data collection method that is chosen. For written, self-reported methods, the survey must be easy to read and understand, as well as professional and appealing, so as to motivate responses (Gay et al., 2009; Leedy & Ormrod, 2005). If using open-ended questions, the researcher should allow plenty of room for answers (Gay et al.). As previously mentioned, close-ended questions using multiple choice, yes/no, true/false, or other such responses are the best for written questionnaires, as they are quick and simple to answer and can be easily coded (Gay

et al.). When conducting verbal surveys, either in person or by telephone, the key is to make sure that the interviewer understands the questions and can clarify anything to the respondent when necessary (Fraenkel & Wallen, 2009; Rubin & Babbie, 2008). Thus, the interviewer needs to be well-trained in regards to the questions. In addition, he or she must be able to record answers in a method that will be conducive to analyzing the collected data (Fraenkel & Wallen; Rubin & Babbie).

Regardless of the method of data collection, all survey instruments should be pilot tested. Gay et al. (2009) suggest that for the pilot test, the researcher choose a few individuals who are similar to the intended respondents. These individuals should critically review the questionnaire and/or interview process, making suggestions and comments that can be used by the researcher to improve the instrument. In addition, pilot testing can assist the researcher in determining how long it will take to complete the questionnaire or interview (Berends, 2006; McMillan & Schumacher, 2006; Mertler & Charles, 2008). Furthermore, if the researcher chooses a larger pilot group, he or she may conduct some basic analysis on the pilot data before spending the money, time, and other resources to conduct a full-scale study (Berends). Pilot testing allows the researcher to fine tune the instrument before presenting it to the study's subjects, which in turn may help increase the response rate.

Gathering Data

Cover Letter

With every mailed survey, the researcher must write a clear, concise, and professional cover letter that will be included with the questionnaire. This letter may also be included when emailing the survey. The purpose of the cover letter is two-fold: the researcher needs to introduce the research study while at the same time entice the respondent to actually complete and return the questionnaire. The cover letter is a marketing tool for the study; the researcher must promote his or her idea to the respondent in order to increase response rates for the study (Fraenkel & Wallen, 2009; Gay et al., 2009; McMillan & Schumacher, 2006; Rubin & Babbie, 2008;).

While every cover letter will be unique, there are many ways to increase the chances that the respondents will indeed return their completed questionnaires. First, the researcher needs to make sure that the language and tone of the letter will be clearly understood by the respondent (Rubin & Babbie, 2008). The researcher needs to introduce the study, as well as why it is important that the respondent complete the questionnaire (Fraenkel & Wallen, 2009; Gay et al., 2009; McMillan & Schumacher, 2006; Rubin & Babbie, 2008). If possible, the researcher should obtain "an endorsement of an organization, institution, group, or administrator that the respondent is likely to know," such as a senator or local government representative (Gay et al., p. 181). The researcher should ensure that the respondent's information will remain either confidential or anonymous (Fraenkel & Wallen; McMillan & Schumacher; Rubin & Babbie). Finally, the researcher should offer to provide results of the study once completed (Fraenkel & Wallen; Gay et al.; McMillan & Schumacher).

In addition to the above components of the cover letter, the researcher should add some finishing touches. First, the letter needs to appear professional and should be addressed to the respondent specifically, which takes little time if a mail merge program is used. The letter should also include a self-addressed, stamped envelope, or some similar method that will allow for easy return of the questionnaire, and the deadline for returning complete materials needs to be evident (Fraenkel & Wallen; Gay et al., 2009; McMillan & Schumacher, 2006). Finally, the researcher should make time to pilot test the letter along with the questionnaire (Gay et al.).

Mail Surveys

When developing a questionnaire that will be mailed to individuals, the researcher must ensure that both the questions and instructions are comprehensible because unlike in interviews, the respondent will not be able to ask for clarification (Berends, 2006). For the same reason, questions should be close-ended and easy to answer. The researcher needs to include a cover letter as described above, as well as a stamped, self-addressed envelope for returning the questionnaire (Berends; Gay et al., 2009; Leedy & Ormrod, 2005; Rubin & Babbie, 2008). Prior to mailing out the survey packet, the researcher must pilot test the questionnaire and make revisions (Leedy & Ormrod). Another important aspect of this type of research is follow up. Because there are often low response rates when using mailed questionnaires, the researcher needs to send at least one follow up mailing a few weeks after the original packet is sent, and the researcher may choose to include another copy of the questionnaire in addition to a letter. If the responses have been kept anonymous, the researcher may have to send out follow up packets to the entire sample, thanking those who have returned the questionnaire and reminding those who did not (Gay et al.; McMillan & Schumacher, 2009; Rubin & Babbie).

There are several advantages to using this method of data collection. As compared to other methods of data collection, mailing surveys is inexpensive and saves time. Unlike interviews, there is no training involved in administering the survey, and because everything is done through the mail, travel costs and time are eliminated (Leedy & Ormrod, 2005; Berends, 2006; Fraenkel & Wallen, 2009; Gay, Mills, & Airasian, 2009). This is an appropriate method for contacting large numbers of individuals, especially if they are geographically dispersed. Another advantage to using the mail system is that respondents will be able to think over the questions before answering, and some individuals may feel more comfortable answering honestly on paper as compared to speaking with an interviewer (Fraenkel & Wallen, 2009; Leedy & Ormrod, 2005).

Despite the advantages, mailed surveys have several drawbacks as well. This method of survey research produces the lowest response rate (Fraenkel & Wallen, 2009; Gay et al., 2009; Leedy & Ormrod, 2005; Mertler & Charles, 2008). Because the surveys are mailed, the researcher does not have the opportunity to explain the benefits and importance of returning the survey, with the exception of what is written in the cover letter. Many people may simply throw the survey away, or they may put it off and forget about it (Berends, 2006; Fraenkel & Wallen). Low response rates can bias the results because there may be significant differences between *respondents* and *nonrespondents* (Berends; Leedy & Ormrod). This limits the generalizability of results. It is in the best interest of the researcher to determine what differences exist between the two groups and note this in the final report.

In some cases, the questionnaire may not be completed by the person it is addressed to, and if it is anonymous, there is no way for the researcher to know this. Mailed surveys also suffer from the lack of communication between the respondent and the researcher. There is no opportunity for the respondent to receive clarification on questions, and the researcher cannot ask respondents to explain unclear answers (Gay et al., 2009; Mertler & Charles, 2008;). Finally, researchers using a mailed questionnaire are limited to sample participants who can read, interpret the questions, and provide written responses (Fraenkel & Wallen, 2009; Gay et al.; Leedy & Ormrod, 2005, Polit & Beck, 2006). This would eliminate participants who are illiterate, as well as those who do not speak English.

Electronic Surveys

Using the same premise as mail surveys, many researchers are looking to email and online surveys

to reach respondents (McMillan & Schumacher, 2006). These surveys, also referred to as electronic surveys, are both inexpensive and require little time to administer to participants (Berends, 2006; McMillan & Schumacher; Mertler & Charles, 2008; Rubin & Babbie, 2008). In order to conduct email surveys, the researcher must first have access to participant emails (Mertler & Charles). Often, researchers who use email surveys will either attach the survey to an email or provide a link to an online survey (Berends, 2006; Mertler & Charles). While email and online surveys are possibly the least expensive methods of administering surveys, they depend upon respondents having access to and knowledge of computers and the internet (Berends; Mertler & Charles; Rubin & Babbie). The researcher must also be fairly computer savvy in order to administer electronic surveys. However, as discussed further in the section entitled "future trends," there are many online resources to assist researchers with electronic surveys.

Telephone Surveys

Telephone surveys are a more personal method of collecting data in survey research (Berends, 2006). Trained interviewers administer the questionnaire orally, which allows them to clarify any questions that the respondent may have (Fraenkel & Wallen, 2009). In addition, if a response is not clear, the interviewer can ask the respondent to explain his or her answer (Berends; Fraenkel & Wallen). Because telephone surveys open the lines of interviewer-respondent communication, it is possible to include open-ended questions (Mertler & Charles, 2008). However, the researcher should use them sparingly, as they are more difficult to analyze and score. Telephone surveys also result in a higher response rate than mailed surveys (Gay et al., 2009; Leedy & Ormrod, 2005). When compared to personal interviews, telephone interviews save time and money, and they allow more anonymity for the respondent (Berends; Fraenkel & Wallen; Leedy & Ormrod; Polit & Beck, 2006; Rubin & Babbie, 2008). Some people may respond more honestly over 5the phone than in person (Rubin & Babbie).

The increase in telemarketing phone calls has hurt researchers' efforts to conduct telephone surveys. People in today's world have guarded themselves against telephone solicitors by screening phone calls through caller identification and voicemail systems (Berends, 2006; Gay et al., 2008; Rubin & Babbie, 2008). Berends suggests that researchers using this method of data collection send out a letter to all sample participants explaining the purpose of the survey, interviewer's name and number, and range of dates that the survey will be conducted (p. 629). Another disadvantage of telephone surveys is that they are much more time consuming and expensive that written and electronic surveys (Berends, 2006; Mertler & Charles, 2008). In addition to making individual phone calls, telephone surveys require researchers to train interviewers (Gay et al., 2009). Finally, telephone surveys are limited to respondents who have and can use telephones, as well as to those who have listed telephone numbers (Berends; Fraenkel & Wallen, 2009; Leedy & Ormrod, 2005; Mertler & Charles; Rubin & Babbie; Polit & Beck, 2006;). This means that researchers may not be able to contact individuals who are hard-of-hearing, do not own landline telephones (only have cellular phones), or whose telephones are unlisted, which again raises the question of bias and generalizability of results.

Personal Interviews

When feasible, the personal interview provides the best quality of data (Polit & Beck, 2006). However, in order to have successful interviews and data collection, there are several considerations when conducting such an interview. First, the interviewer needs to be dressed appropriately to the situation, being careful not to over or under dress depending on the sample characteristics.

Regardless of attire, the interviewer should present with an open, agreeable personality that will not introduce bias or distaste from the respondent. The interviewer should be adequately trained and have a strong understanding of the questions before approaching the respondent. Interviewers need to be aware of how to ask the questions and record the answers. This includes know when and how to follow up on respondent's answers and to clarify questions without introducing bias. Interviewers must also be able to observe and take notes on any personal characteristics of the respondent that might be of particular interest to the research study (Fraenkel & Wallen, 2009; Leedy & Ormrod, 2005; Rubin & Babbie, 2008).

Because personal interviews are often conducted one-on-one, there are many advantages to this method. It allows the interviewer to develop rapport with respondents, increasing trust and thus hopefully more honest answers (Fraenkel & Wallen, 2009; Leedy & Ormrod, 2005). Furthermore, the response rate is much higher than any other method, especially on confusing questions (Berends, 2006; Gay et al., 2009; Leedy & Ormrod). The interviewer is there to clarify questions for the respondent, so the number of unknown answers is limited (Berends, 2006; Fraenkel & Wallen, 2009; Gay et al.; Mertler & Charles, 2008; Rubin & Babbie, 2008). This method does not require the respondent to be able to read or write, which may increase the type of respondents available for the study (Fraenkel & Wallen). Finally, personal interviews ensure that the interviewee is the intended respondent for the study, unlike in mailed surveys (Berends).

Despite the disadvantages, personal interview data collection is the most costly and time consuming method in survey research (Berends, 2006; Fraenkel & Wallen, 2009; Gay et al., 2009; Leedy & Ormrod, 2005; Mertler & Charles, 2008; Polit & Beck, 2006). This collection method requires both extensive training and travel for the interviewers (Fraenkel & Wallen, 2009; Gay et al.; Mertler & Charles, 2008). Because interviews entail one-on-one administration, only one interview can be conducted by each interviewer at a time. Thus, the researcher will more than likely need to train and pay multiple interviewers. For the same reason, personal interviews do not allow for anonymity, which may make some respondents less likely to answer openly to controversial questions (Fraenkel & Wallen; Gay et al.). This method of collection is not feasible for surveying a large geographical area due to the travel expenses involved (Berends). In addition to cost and time considerations, there is also the possibility of introducing interviewer bias (Berends; Gay et al.; Rubin & Babbie, 2008). This needs to be specifically addressed during the training process.

Direct Administration to a Group

When directly administering a survey to a group of participants, many of the same principals of personal interviews apply. As in personal interviews, the survey administrator must be familiar with the questions and the format of the questionnaire. However, instead of one-on-one administration, this method involves administering the survey to a group of respondents. Thus, all of the respondents must be in the same location for the survey (Fraenkel & Wallen, 2009; Mertler & Charles, 2008).

The advantages of direct administration mirror many of those of personal interviews. Direct administration provides a high response rate and clarification on responses and questions (Fraenkel & Wallen, 2009; Mertler & Charles, 2008). In contrast to personal interviews, only one interviewer is needed, and often the researcher takes on this role, saving time and money. In addition, transportation costs are virtually eliminated because all of the respondents are located in one place (Fraenkel & Wallen; Mertler & Charles). Unfortunately, this method will not work for all types of study. The biggest disadvantage of direct administration is that it is not always possible for researchers to gather respondents in one location.

Thus, the researcher is limited to areas that are geographically close (Fraenkel & Wallen; Gay et al.; Mertler & Charles).

Dealing with Nonrespondents and Maximizing Return Rate

According to Rubin and Babbie (2008), "a response rate of at least 50 percent is usually considered adequate for analysis and reporting...60 percent is good...70 percent is *very* good" (p. 371). Survey research often suffers from low response rates, so the best plan for countering such an issue is to maximize the return rate up front. To do so for written questionnaires, researchers need to carefully design the questionnaire and cover letter in a way that will "motivate individuals to respond" and "alleviate any resistance they may have about participating in the survey" (Rubin & Babbie, p. 369). The topic must be interesting and the questionnaire must be simple to complete (Berends, 2006; Fraenkel & Wallen, 2009; Leedy & Ormrod, 2005). The researcher should also develop a persuasive cover letter, and including a self-addressed, stamped envelope is essential (Berends; Gay et al., 2009; Leedy & Ormrod; Rubin & Babbie). When conducting personal and telephone interviews, the interviewers must have the charisma and personality that will encourage responses (Fraenkel & Wallen). In addition, response rates should increase if the researcher sends out a letter detailing the study and giving a date and/or time for the interview (Gay et al.). Regardless of the data collection method, the researcher can also increase the response rate by offering incentives, offering to share the results of the study with the participants, and ensuring anonymity and/or confidentiality (Fraenkel & Wallen; Gay et al.; Leedy & Ormrod; Rubin & Babbie).

Although the researcher has done everything possible to maximize the response rate during the first attempt, follow up attempts may be necessary. Depending on available resources and the type of data collection method originally used, the researcher may choose to use the phone, mail, or email to conduct follow up activities (Gay et al., 2009). While specific time periods vary, the first attempt should be sent approximately two to three weeks following the original mailing (Gay et al.; McMillan & Schumacher, 2006). This should include a follow up letter, as well as another copy of the questionnaire if using a written method of data collection. Some researchers suggest sending a third follow up if resources allow (McMillan & Schumacher). McMillan and Schumacher recommend sending this follow up letter and survey via certified mail to ensure that it reaches the appropriate household. Because some researchers ensure anonymity to their respondents, it may be difficult to determine who exactly has responded. In such cases, the researcher can send out reminders to everyone, thanking those who have responded and reminding those who have not. McMillan and Schumacher also suggest supplying subjects with postcards that include the respondents' names. These can be mailed separately from the completed survey to assure anonymity, but they would also allow the researcher to determine who has responded and who has not.

Despite strenuous efforts to increase response rates, researchers will more than likely still have a number of nonrespondents. The researcher should determine if there are certain characteristics of the nonrespondents that kept them from responding, such as age or gender, which would then raise the issue of bias in the study (Gay et al., 2009; Leedy & Ormrod, 2005; McMillan & Schumacher, 2006). This bias, in turn, affects the generalizability of the results (Gay et al.). The researcher should always acknowledge bias in the study, especially among nonrespondents, by stating the number and/or percentage of nonrespondents and possibly some identifying characteristics (Leedy & Ormrod). Gay et al. recommend interviewing a small group of nonrespondents to gather demographic information. If the demographics are relatively similar to respondents, then researcher may reasonably

assume that the results can be generalized to the entire population (Fraenkel & Wallen, 2009; Gay et al.). The researcher should also recognize that those who did not respond may have answered survey questions differently than those that did respond (Fraenkel & Wallen; Gay et al.; Leedy & Ormrod). In addition, some subjects may not have responded because the study questions were controversial (Gay et al.; Leedy & Ormrod; McMillan & Schumacher). For example, if the questionnaire was asking about certain delinquent or criminal behaviors, there may be a number of individuals who intentionally did not return the survey, answer the phone, or attend the interview because they did not want to admit to such wrongdoings. In the end, it is best if the researcher acknowledges the bias that is present in the study, as well as what may have caused the bias (Fraenkel & Wallen; Leedy & Ormrod).

Item Nonresponse

Item nonresponse refers to instances when respondents do not fully answer a particular question. This may occur with any data collection method, although it occurs most often in written methods. This is because telephone and personal interviews and direct administration methods have an interviewer who may probe the respondent to fully complete each question (Berends, 2006; Rubin & Babbie, 2008). In written methods, the questionnaire is self-completed by the respondent without the interviewer or researcher present. Fraenkel and Wallen (2009) suggest that items that deal with uncomfortable issues, i.e. personal finances, drug use, sexuality, and criminal activity, have the highest rate of nonresponse. In such cases, the respondent may be too embarrassed to answer honestly and may instead omit it. Item nonresponse may also occur if the instructions are not clear. In addition, open-ended questions often have a higher nonresponse rate than close-ended questions. Finally, sometimes the researcher has to eliminate a respondent's answer because he or she cannot read the response clearly. The best solution to dealing with item nonresponse is to carefully design the data collection tool. Inevitably, even the most carefully planned questionnaire will still result in missing responses. The researcher should acknowledge any item nonresponse issues during the final report, as well as how these issues may have affected the study results (Fraenkel & Wallen).

Tabulating Responses

After the researcher has received the completed surveys, it is time to tabulate all of the responses. Computer programs and databases can assist in such endeavors, as can computerized scanners. In order for the researcher to use scanners, he or she must have the respondents mark their answers on a scannable sheet, and the questions must be close-ended, such as true and false or multiple choice (Gay et al., 2009; Leedy & Ormrod, 2005). If the surveys include open-ended questions, they must be coded in a way that is amenable to analysis (Gay et al.).

Analyzing Results

Once the researcher has tabulated the responses, he or she must analyze and interpret the results. Data should be presented in percentages, i.e. 45% of respondents answered yes to a certain question, and the researcher may chose to demonstrate the data through graphs and charts (Fraenkel & Wallen, 2009; Gay et al., 2009). However, because of item nonresponse, not every participant will answer every question. For this reason, it is important for the researcher to include the total number of participants at the beginning of the analysis section, as well as the total number of respondents for each question, i.e. out of 400 respondents, 350 answered the question. Out of those respondents, 75% answered "true" (Fraenkel & Wallen; Gay et al.).

While describing the data in percentages is important, it is not enough to simply provide charts, graphs, and frequencies. Leedy and Ormrod (2005) encourage researchers to view the study as the way to gather insight into a problem through the use of the data that has been collected. While numbers and frequencies are important, they do not mean anything unless they can be interpreted in a way that links them to the research problem (Berends, 2006; Leedy & Ormrod). Gay et al. (2009) further suggest that researchers cluster tabulated results into groups based upon the research questions and objectives. The researcher can then explain the tabulations as they relate to the specifics of the study.

ISSUES, CONTROVERSIES, AND PROBLEMS

Despite the benefits of conducting survey research, there are many issues that make this method less appealing than others. Survey research is not suited for all types of research, as it cannot provide information regarding causality (Rubin & Babbie, 2008). It simply describes what is occurring, but not why. One major challenge in survey research is overcoming the issue of low response rates (Berends, 2006; Fraenkel & Wallen, 2009; Gay et al., 2009; Mertler & Charles, 2008). With the inundation of telephone and internet surveys, as well as postal junk mail and solicitors, many individuals are skeptical of surveys in general (Gay et al.). As previously discussed, low response rates lead to problems generalizing results from the sample to the target population. Another issue plaguing survey research is that it is dependent upon self-reporting by respondents. The researcher must assume that respondents are honest. However, some individuals may not respond truthfully or completely, especially on areas dealing with controversial issues (Leedy & Ormrod, 2005; Rubin & Babbie). Finally, if interviewers are not properly trained, they may introduce bias and disrupt the validity of the survey (Berends; Fraenkel & Wallen; Gay et al.). These challenges, as well as those that have been previously described in the data collection section, may discourage some researchers from conducting survey research.

SOLUTIONS AND RECOMMENDATIONS

Despite the difficulties and issues surrounding survey research, there are some approaches that may increase the efficiency of such research designs. To counter low response rates, the researcher must design an effective, data collection instrument capable of motivating responses from individuals (Berends, 2006; Fraenkel & Wallen, 2009; Gay et al., 2009; Leedy & Ormrod, 2005; McMillan & Schumacher, 2006; Mertler & Charles, 2008; Rubin & Babbie, 2008). To be effective, the survey must look neat and professional, include clear instructions, and consist of questions that are simple and quick to answer when possible (Berends, 2006; Fraenkel & Wallen, 2009; Gay et al.; Leedy & Ormrod; McMillan & Schumacher; Mertler & Charles). Offering to share the research results with the participants may also add "buy in" to the study, and thus increase responses (Fraenkel & Wallen; Gay et al.). In addition, writing an effective cover letter and pilot testing the instrument are crucial next steps (Berends; Fraenkel & Wallen; Gay et al.; Leedy & Ormrod; McMillan & Schumacher; Mertler & Charles; Rubin & Babbie) To increase the likelihood of truthful responses, the researcher should assure confidentiality and/or anonymity to the participants (Fraenkel & Wallen; Gay et al.; McMillan & Schumacher; Rubin & Babbie, 2008;). Finally, effectively training interviewers is essential when conducting phone and personal interviews (Fraenkel & Wallen; Gay et al.; Leedy & Ormrod; Rubin & Babbie). By following some of these recommendations, the researcher can

assure a much more positive result, eliminating many of the challenges discussed above.

FUTURE TRENDS

With the ever-changing world of technology, survey research has already been able to reach more people. Electronic surveys and computer-assisted software programs have changed the way that researchers design studies. Despite some disadvantages including computer and/or telephone accessibility, these methods save time and resources, as researchers can quickly and accurately gather, analyze, and store data. As technology continues to grow and mature, so too will the face of survey research.

Electronic Surveys

Researchers may email potential respondents and attach the survey to the email, or they may choose to add a URL to a website that hosts an online survey. As mentioned previously, disadvantages of electronic surveys include both respondents and researchers have access to and knowledge of computers and the internet. However, more websites are now available to host surveys. Gay et al. (2009) suggest that "individuals who are comfortable using the Internet can find a veritable smorgasbord of online, web-based survey tools to support the design and analysis of survey research instruments" (p. 186). They describe two such sites: SurveyMonkey.com and Zoomerang. With the use of such sites, researchers can collect, store, and analyze data.

Computer-Assisted Software Programs

In addition to online and email surveys, researchers have also accessed computer programs to select participants, record data, and analyze results (Berends, 2006; Leedy & Ormrod, 2005; Rubin & Babbie, 2008). Various computer software programs are available to assist survey researchers in sampling, collecting data, and analyzing results. Rubin and Babbie detail several methods used in survey research. Computer-Assisted Telephone Interviews (CATI) has randomly selects participants by telephone, provides the interviewer with questions to ask the participants, allows the interviewer to type and store participant respondents, and analyzes the data. This method would limit the researcher to participants who have telephones. While researchers have used CATI for over a decade, it is the basis for many newer technologies. Computer-Assisted Personal Interviewing (CAPI) mimics CATI but is used for personal interviews instead of telephone interviews. While computer-assisted self-interviewing (CASI) allows the respondent to read and respond to interview questions using the researcher's computer, computer self-administered questionnaires (CSAQ) are delivered to the respondent via computer disk. The respondent records his or her answers and returns the completed questionnaire to the researcher. The latter method would be limited to those participants who have access to a computer, and both CASI and CSAQ require that participants be able to read and comprehend the questions.

Two methods of automated telephone surveys are now available as well. When using touch-tone data entry (TDE), "the respondent initiates the process by calling a number at the research organization. This prompts a series of computerized questions, which the respondent answers by pressing keys on the telephone keypad" (p. 379). Similarly, voice recognition (VR) has the respondent call a number, but this system "accepts spoken responses" (p. 379). These two methods of telephone surveys are limited to those participants who both have access to a telephone and who are not hard of hearing.

CONCLUSION

From politics to business to education, professionals have discovered the many benefits of survey research. Simply stated, survey research provides us with a glimpse into the minds of the people. By finding out what people think, one can make changes in order to develop better products and services, law and regulations, and even personal attitudes. Adaptable to many topics, populations, and data collection techniques, survey researchers have a large range of flexibility in designing their studies. With the onset of new technologies, data collection has been made easier and faster. However, because the of the adverse affects associated with the increase in telemarketing and internet "pop-up" surveys, along with the other issues related to nonresponse, the burden is on the researcher to develop an effective survey that motivates response. That said, survey research is still one of the most cost-efficient and time-saving methods available to researchers today.

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KEY TERMS

Cohort Study: A *cohort study* may investigate the attitudes of high school principals who began their positions in 2009.

Cross-Sectional Research Design: This design will administer the survey to one or more samples one time only. Unfortunately, however, cross-sectional designs may only present a picture of the target population at the time that the survey was administered.

Electronic Surveys: Using email surveys to attach the survey to an email or provide a link to an online survey.

Longitudinal Research: This type of research involves collecting data from respondents on more than one occasion.

Panel Study: The *panel study* follows the exact same group of participants over time, and the follow up study reconnects at a later time with respondents who participated in the survey previously.

Survey Research: Survey Research is used to gather information about population groups to "learn about their characteristics, opinions, attitudes, or previous experiences."

Trend Studies: Trend studies gather data from a particular population characterized by a specific variable, such as education level.