Evaluation/Survey Services

ESS

Six Steps to a Successful Survey

Postsecondary Schools

If your institution is considering use of an ACT survey, chances are you're headed in the right direction! ACT's Evaluation/Survey Service (ESS) was developed to assist educational institutions with their survey research needs, and this document was designed to help ESS users make necessary decisions during each of six basic steps in a survey project. These steps, listed below, can be used as an outline for your initial planning efforts.

Step 1: Designing the Study
Step 2: Developing/Selecting the Instrument
Step 3: Selecting the Sample
Step 4: Scheduling and Conducting the Administration
Step 5: Scanning the Survey and Analyzing the Results
Step 6: Interpreting and Using the Results

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Step 1: Designing the Study

Careful study design is essential: A well-conceived design allows for efficient and effective execution of all subsequent steps in the study and helps ensure the utility of survey results.

Developing Objectives

The first phase of a survey project is the appointment of a planning committee comprising faculty, students, administrators, and other interested individuals. The functions of this committee are the definition and prioritization of the institution's specific needs and the formulation of research objectives related to those needs. Development and wording of the objectives should reflect the ultimate uses to be made of the data by institutional decision makers. Careful specification of each research objective can prevent the omission of important issues, help researchers remain properly focused during the project, and ensure a common understanding of the project's purposes and anticipated outcomes.

Locating Data Sources

Once the research objectives have been established and the types of information needed to meet those objectives have been identified, exploration of information sources can be undertaken. Readily available sources of data include registration, financial aid, and transcript files as well as educational and governmental agency data banks. If data from these and other sources prove to be inadequate for addressing the research objectives, then use of a survey may be necessary, particularly if the desired information includes one or more of the following types: institution-specific, attitudes, perceptions, opinions, and/or other non-cognitive information.

Step 2: Developing/Selecting the Instrument

Developing or Purchasing the Survey Instrument

Before deciding whether to develop or purchase an instrument, a careful review of available instruments should be conducted. There are relative advantages and disadvantages associated with each alternative; therefore, each institution will need to consider its own unique situation and resources when making this decision.

The most notable advantage of a locally developed instrument is that it can be tailored to address the institution's specific research needs, while commercially developed instruments must address those needs common to many institutions. Among the disadvantages of developing an instrument locally are the potential for questionable instrument quality, reliability, and validity; the lack of personnel with survey development expertise; insufficient development time; and/or budget constraints.

In addition to instruments with documented reliability and validity, ESS provides a number of other advantages. First, each instrument has been designed for adaptation to meet local needs (i.e., via use of the additional question section). Another advantage is access to the various ESS scanning and reporting services, ranging from standard services and materials to specialized or customized services and materials for individual institutions or groups of institutions. Comparative data (user norms) from a large number of institutions that have used a particular instrument are also available for most ESS instruments and considered by many institutions to be quite useful. Finally, ACT's national reputation can lend additional credibility to survey findings.

Selecting an Instrument

If the decision has been made to purchase a commercial survey instrument, the most appropriate instrument(s) must be selected. The ESS postsecondary instruments available include those listed below.

- *Adult Learner Needs Assessment Survey*
- *Alumni Survey (4-Year College Form)*
- *Alumni Survey (2-Year College Form)*
- *Alumni Outcomes Survey*
- *College Outcomes Survey*
- *College Student Needs Assessment Survey*
- *Faces of the Future Survey*
- *Financial Aid Student Services Survey*
- *Entering Student Survey*
- *Student Opinion Survey (4-Year College Form)*
- *Student Opinion Survey (2-Year College Form)*
- *Survey of Academic Advising*
- *Survey of Current Activities and Plans*
- *Survey of Postsecondary Educational Plans*
- *Survey of Student Opinions*
- *Withdrawing/Nonreturning Student Survey (Long Form)*
- *Withdrawing/Nonreturning Student Survey (Short Form)*

If the information to be provided by items on an ESS instrument does not sufficiently address all of the research objectives, up to 30 additional questions may be added; these items may be developed by institutional personnel and/or selected from ACT's *Item Catalog*. Finally, if none of the ESS instruments are judged appropriate, ESS can provide customized instrument design services to meet particular survey needs.

Step 3: Selecting the Sample

After defining the population (e.g., entering students, alumni, older students, withdrawing students), a sample may be selected from that population. Care must be taken to ensure that an appropriate sampling technique is used and that the sample size is sufficient for answering your research questions.

One alternative is to survey the entire population; the advantage of this method is the elimination of sampling error. However, if the population is large, the costs may be prohibitive. Should a sample of the population be desired, probability sampling is recommended. With probability sampling, a simple random, systematic, cluster, or stratified sample may be utilized and, after the sampling procedure has been selected, the sample size can be determined. Institutions are encouraged to consult a pertinent text and/or contact a sampling statistician prior to making these decisions. (The ACT staff includes mathematical statisticians, trained in sampling theory and survey design, who can assist in the selection of an appropriate sampling technique and sample size.)

The information in Table 1 can be used to help you determine the number of individuals from whom you need completed survey forms in order to generalize the findings to various subgroups. For example, if an institution with an enrollment of 5,000 students wanted to study the responses of freshmen, and if 1,000 of their population were freshmen, they would need to have 375 **completed** surveys to be 95% confident that the estimated proportion for that group would be within ±.04 of the true proportion (see Table 1 on following page). If personnel anticipated a return of less than 375 completed surveys, they would need to increase their initial freshmen sample size to get back a minimum of 375 completed freshmen survey forms.

As you move through the planning phase, identify every subgroup (e.g., seniors, N=1,000) whose responses you may want to study. (Note: Be sure there is a question on the survey that will allow you to identify that group; if there is not one, write an additional question(s) that will allow you to do so.) When determining sample sizes, you must select an appropriately sized sample for the entire group **and** for each subgroup within that larger group. For example: If your population size were 1,000 and you wanted a desired range of ±.05, the sample size should be 278. Remember, you would need to have 278 **completed** surveys. Suppose that you also had two subgroups (male and female) you wanted to study: males = 300, females = 500, and prefer not to respond = 200. (These totals are, of course, estimates that you make during the planning phase.) At the ±.05 level, you would need to **sample** 168 males, 216 females, and 132 prefer not to responds. Based on the necessary sample size (i.e., total, completed surveys) for each of these three subgroups, you would need an original, total sample size of at least 516 for these three subgroups, 238 more than that needed for the **entire** sample. Remember that for any subgroup(s), as well as for any total group, the numbers in Table 1 refer to the number of completed, returned survey forms—not the number purchased, mailed, or handed out.

Table 1

Minimum Number of Completed Surveys Required for 95% Probability That the Estimated Proportion Will Be Within the Desired Error Range of the True Proportion

Size of population from which sample is selected	Desired error range (at the 95% confidence level)				
	±.01	±.02	±.03	±.04	±.05
100	99	96	91	86	79
200	196	185	168	150	132
300	291	267	234	200	168
500	475	414	340	273	216
1,000	906	706	516	375	278
2,000	1,655	1,091	696	462	322
5,000	3,288	1,622	879	536	357
10,000	4,899	1,936	964	566	370
100,000	8,762	2,345	1,056	597	383
∞	9,604	2,401	1,067	600	384

Note: Data in this table are based on the assumption that the statistic of interest is the proportion or percentage. Simple random sampling will be used. The response rate will be 100%. Probability statements will refer to the entire population. The proportion of individuals selecting the response of interest will be .5 (p=.50).

Step 4: Scheduling and Conducting the Administration

Developing the Time/Task Schedule

Once the study design has been established and the instrument and sample have been selected, the focus turns to administration of the survey. Overlooking key administrative considerations may bias the data and invalidate the study results; therefore, the development of a time/task schedule, in which all procedures and activities pertinent to the administration are fully detailed, is recommended. Illustrated in Figure 1 is a simple schedule; a more detailed schedule is recommended for an actual survey. (Note: Approximately four months will be needed to complete a mailed survey administration.)

Activity	Start date	End date
1. Appoint planning committee	1/14	2/11
2. Determine objectives	1/26	2/11
3. Select appropriate instrument	2/05	2/20
4. Make sampling decisions	2/11	2/27
5. Develop or select additional questions	2/20	3/06
6. Develop cover letters and follow-up reminders	2/20	3/06
7. Print all necessary materials	3/06	3/13
8. Administer survey and follow-up mailings	3/16	4/24
9. Score instruments	4/24	5/15
10. Conduct technical analyses and prepare reports	5/18	6/12
11. Evaluate and plan based on results	6/12	—

Figure 1. Sample time/task schedule

Selecting the Administration Mode

Before conducting the survey, several decisions must be made about administration mode. Surveys can be administered, for example, during orientation or registration, in classes, at group meetings, in residence halls, or through the mail; some modes are more appropriate for certain populations than are others. Some administration modes guarantee high response rates; others, including mailed surveys, require precautions to ensure an adequate response rate. Even if the entire population has been surveyed, each non-response may introduce error into the data: As the response rate goes down, the potential for response bias goes up. The greater this error, the more likely it is that the study results will be invalid. For this reason, administration modes that guarantee high response rates (e.g., in class) may be preferable to modes subject to lower response rates (e.g., mail). (ACT personnel have considerable experience in maximizing survey response rates and, if requested to do so, can assist an institution with this matter.)

Conducting a Mailed Survey—Special Considerations

Although not all considerations pertinent to a mailed survey can be discussed in this limited space, there are some pragmatic considerations that should be mentioned. The effects of postage class, from both the perspective of cost and return rate, deserve careful attention. The advantage of using standard class, bulk mail versus first class mail can be considerable in terms of cost. The primary disadvantage of using standard class bulk mail is that delivery may take up to three weeks per mailing and, therefore, may result in lower response rates.

If first class mail is selected, costs can be reduced by attention to the size and weight of all materials in the mailings. (For example, a postal surcharge for oversized mail can be avoided by using envelopes, particularly return envelopes, that are 6 1/8" x 11 1/2" or smaller. Further cost reductions can be realized by printing the cover letters and additional questions on lightweight paper, printing the instrument and/or additional questions front to back, and/or using a two-column format for additional questions.)

A variety of techniques for increasing response to a mailed survey have been investigated. Although the results in most cases are not conclusive, many survey researchers support the use of one or more of the techniques described below.

- Have the cover letter(s) signed or co-signed by an individual(s) who is well known, well liked, or in some other way likely to positively influence those being surveyed.
- Print the cover letter(s) on the institution's letterhead.
- Design a follow-up postcard using eye-catching graphics and a humorous tone.
- Enclose an incentive (e.g., money, tea bag, mascot bumper sticker) as a thank-you-in-advance-for-participating.
- Print additional items on attractive colored paper, using complementary ink(s).

When conducting a mailed survey, additional considerations may improve the response rate. Following is a brief discussion of these considerations.

- First, the inclusion of students as members of the planning committee and communication to student leaders and the student body about the purpose and progress of the survey can heighten student interest and increase their participation.
- Second, careful attention should be given to the development of a cover letter, written in a courteous and sincere tone, in which the purpose and importance of the project are explained, the uses of the findings are outlined, and a guarantee of confidentiality is offered.
- Third, make certain the timing is appropriate for the population. Most surveys conducted just before or after vacations or during exams tend to have a lower response rate than those conducted when students are more readily available and less distracted.
- Fourth, the timing of follow-up contacts (mail or phone) should be carefully scheduled. Mailed follow-ups should be sent at 10-14 day intervals (if using first class mail) or at 21-30 day intervals (if using standard class mail). Watch the returns—when they begin to drop, it's time to send a reminder.
- Fifth, the mailing sequence must be carefully considered. The sequence found by many to be both most efficient and most effective consists of a first mailing (containing a cover letter, instrument, and postage-paid return envelope) to all those sampled, a second mailing (reminder postcard or letter) to all nonrespondents, and a third mailing (revised cover letter, instrument, and return envelope) to all remaining nonrespondents. Some institutions have used a telephone contact as one of the stages in a mailing sequence. If used, the telephone contact should be scheduled to occur immediately after the time it is estimated that the majority of those sampled have had a chance to respond to the latest mailing.

To ensure that follow-up mailings are sent to only those who haven't yet responded (thus reducing unnecessary contact, which can be costly in terms of both postage and goodwill), the identification system outlined below or a similar, carefully designed plan should be used.

- Assign an identification (I.D.) number to each individual in the sample. These numbers should be arbitrarily selected and sequentially assigned to individuals. DO NOT use a Social Security or any other known I.D. number.
- Mention the I.D. number in the cover letter and assure subjects that it will be used for follow-up purposes only (e.g., "The numbers printed on the front of the survey form will be used only to conduct follow-up mailings to those individuals who do not return a completed form.").
- Stamp or write the number assigned to an individual on the survey instrument, preferably in the space between "Directions" and "Section I" of an ESS instrument. DO NOT place the number in or near computer guides (i.e., timing marks found on all optically-readable instruments).
- Print the individual's I.D. number in the upper, right-hand corner of each of her/his mailing labels (e.g., three labels for each subject if a three-phase mailing is to be used). This format decreases the time it will take to handle completed forms, change of address envelopes, and undeliverable envelopes.

- When assembling the packets for mailing, carefully match the I.D. number on the instrument with the I.D. number on the mailing label.
- When a completed survey is returned, locate any remaining labels for the I.D. number and delete those labels.
- If a packet is returned with a forwarding address, create a set of labels with the new address and begin anew the mailing process for that I.D. number.
- Keep a tally of those packets and postcards returned as undeliverable. This count should be considered when calculating the survey response rate.

Step 5: Scanning the Survey and Analyzing the Results

Once the survey project has been completed, ACT can scan ESS instruments, analyze the data, and prepare reports. Alternatively, an institution may choose to have its own personnel key-enter the responses; however, because this process is both time-consuming and error-prone, careful consideration should be given to the actual expense of such an approach before it is adopted.

Institutions using ACT's scanning/reporting service can select from various reporting media in which to receive their survey results. Currently, these reporting options are available for institutions.

- **Summary Report.** This report provides frequencies and percentages for demographic and all other survey items. For item sets with Likert scale responses, the items are presented in rank order by average from highest to lowest and in item number order with frequencies, percentages, and standard deviations.
- **15-Subgroup Report.** The subgroup report contains one page of data for every item on the survey instrument. At the top of each page is the item text with all response alternatives listed as column headings. Each of the rows contains a subgroup name specified by the institution, followed by frequencies, percentages, and, where appropriate, means and standard deviations.
- **Graphics Report.** This report provides graphical information for selected demographic and Likert scale items for local data and in comparison with national user norms. Available for these surveys: *Alumni Outcomes Survey, Alumni Survey (2- and 4-year forms), College Outcomes Survey, College Student Needs Assessment Survey, Entering Student Survey, Faces of the Future Survey, Student Opinion Survey (2- and 4-year forms),* and the *Survey of Academic Advising.*
- **Statistical Comparison Report.** This report provides statistical comparison of local data with those of a selected national user sample. This report is available for only the *Student Opinion Survey* and *Student Opinion Survey (2-Year College Form).*
- **Diskette or CD.** The diskette or CD contains scanned survey data in ASCII format. The data can be imported into SAS, SPSS, or Excel.

Step 6: Interpreting and Using the Results

The impact of survey results on institutional decision-making depends both on **what** is communicated and **how** it is communicated. Listed below are some basic guidelines to facilitate the effective organization and dissemination of survey results.

- First, the researcher should consider the audience(s) and design her/his presentation(s) accordingly (e.g., a presentation designed for a group of professional colleagues might need to be quite different from that designed for a group of community business leaders).
- Second, the researcher should identify relationships in the data that are most pertinent to the research objectives (e.g., analyses should include comparisons among subgroups, within items, with expectations [hypotheses], and with reference groups results).
- Third, relationships should be presented in one or more brief reports that clearly and concisely convey the essential findings. (Graphic presentations, such as bar graphs and pie charts, can enhance the ease with which individuals grasp key relationships and are usually much more effective than extended narratives.)
- Fourth, statistical treatments should be straightforward and only as complex as required to identify key concepts appropriate for a particular audience.
- Fifth, the educational implications and their impact on decision-making should be emphasized.

For More Information or Assistance

You can contact ESS staff as indicated below. Our ESS materials and services were developed to help educational institutions and agencies such as yours with their survey needs. Our staff members look forward to working with you!

Ordering:

ESS Operations (70)
2727 Scott Blvd.
PO Box 1008
Iowa City, IA 52243-1008
319/337-1893
Fax: 319/337-1467

Scanning and Reporting:

ESS Operations (83)
2727 Scott Blvd.
PO Box 4059
Iowa City, IA 42243-4059
319/337-1186
Fax: 319/337-1578

Using report results for accreditation, outcomes assessment, and effectiveness measures:

ACT Educational Services Division
PO Box 168
Iowa City, IA 52243-0168
800/294-7027
Fax: 319/337-1790
outcomes@act.org

Discussing research-related issues (e.g., sample selection, item construction, specialized services and materials):

ACT Survey Research Services
PO Box 168
Iowa City, IA 52243-0168
319/337-1440
Fax: 319/341-2284