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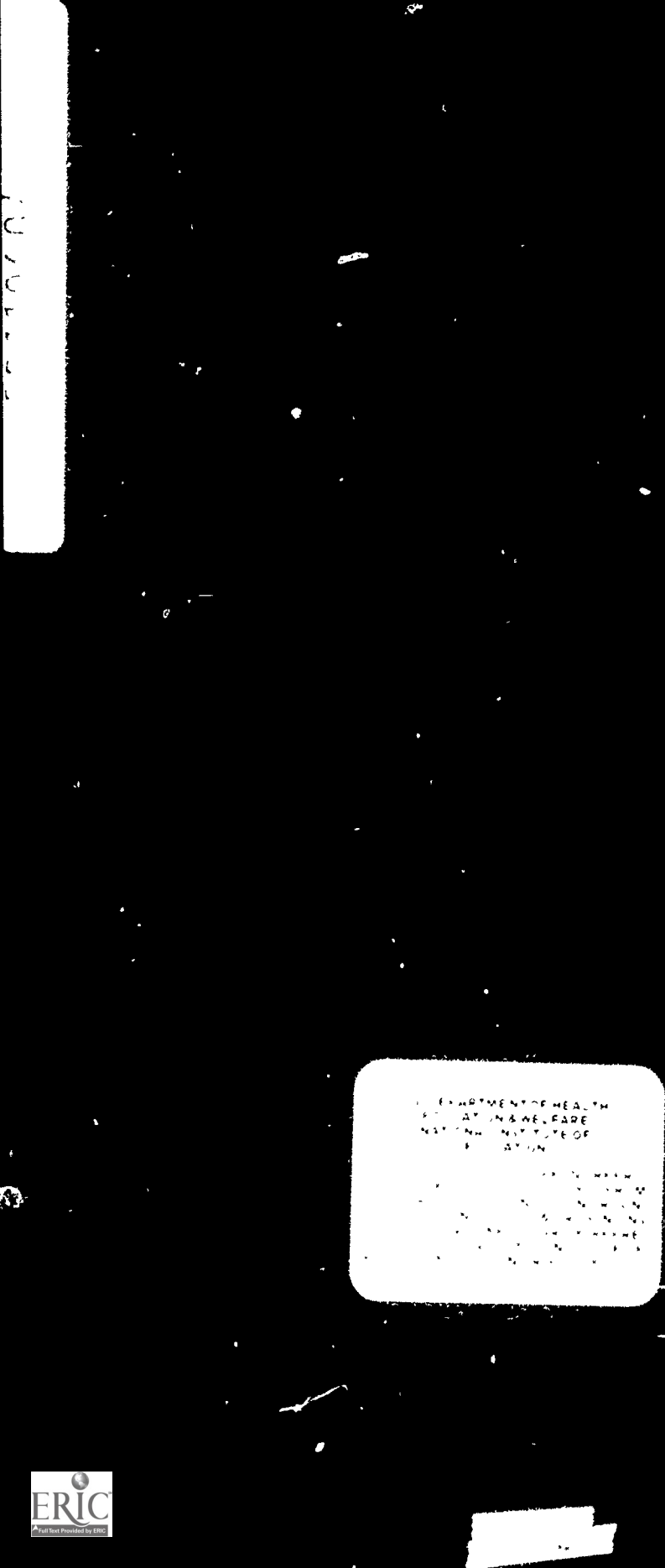
ABSTRACT

The NCHEMS Information About Students (IAS) project has as one of its primary goals the development of procedures and materials to assist institutions of postsecondary education in conducting attrition studies. It was the intent of the IAS project to develop and pilot test a questionnaire and accompanying procedures that would help institutions understand and explain their individual attrition problems and proceed to appropriate corrective action where possible. Toward this goal, four diverse institutions participated in pilot test attrition studies during 1975. In each case, NCHEMS staff and the institutional administrators in charge of the survey worked closely together to resolve problems as they arose as well as to ensure that the questionnaire met the needs of the individual institution. This manual was written as a guide for institutional practitioners to conduct their own attrition studies, and was based on a year of pilot test effort and the successful completion of four attrition studies. (Author)



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A MANUAL FOR CONDUCTING STUDENT ATTRITION STUDIES IN INSTITUTIONS OF POSTSECONDARY EDUCATION

Technical Report No. 74

Cathleen Bower

Edward Myers

March 1976

National Center for Higher Education Management Systems at
Western Interstate Commission for Higher Education

P.O. Drawer P Boulder, Colorado 80302

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PREFACE

The materials and procedures in this manual for conducting student attrition studies at institutions of postsecondary education (PSE) were developed as a part of the National Center for Higher Education Management Systems (NCHEMS) project on Information About Students (IAS) now incorporated into the NCHEMS Outcomes of Postsecondary Education Project.

This manual was written and developed in response to a current need of PSE planners and managers to be able to assess and understand better the phenomenon of decreasing enrollments caused by students' dropping out, stopping out, or transferring out of their institutions. Procedures and materials included in this document were pilot tested during 1975 in four diverse postsecondary education institutions: the University of Colorado, Arapahoe Community College, Windham College, and the University of Southern Colorado. It is hoped this manual will provide tools that individual institutional staff can tailor and use at their schools to investigate the kinds of students who leave and the reasons students give for not returning.

ACKNOWLEDGEMENTS

A number of persons were helpful in the development and production of this manual. Of particular assistance were the staff at the four pilot-test institutions who spent a good deal of time and effort in reviewing and making suggestions concerning the materials and procedures implemented at their schools. These staff members were Richard Harpel and Jean Endo at the University of Colorado; John Watt and Anita Lowery at Windham College; Wilfred Martinez and Douglas Patino at the University of Southern Colorado; and Leahbeth Barnard and Arthur Dowell at Arapahoe Community College.

A number of NCHEMS staff members also helped in the production and development of this manual through their careful review and helpful comments. Our special thanks go to Maureen Byers, John Chaney, Anahid Katchian, Oscar Lenning, Glen Miyataki, Sidney Micek, and Allan Service.

TABLE OF CONTENTS

LIST OF FIGURES

I

INTRODUCTION

Postsecondary education planners and managers are increasingly concerned with problems related to students' dropping out[1], stopping out[2], or transferring to other schools. Small private colleges, in which most revenue comes from tuition, are concerned with rising attrition rates; community and urban colleges are concerned with understanding and predicting the rising incidence of stopping out; and larger institutions are concerned with declining enrollments, reduced public funding, and the passage of legislation requiring prorated refunds for students who leave school.

There are a number of reasons why postsecondary education institutions might want to learn more about the reasons students leave school without completing a program. Most of these reasons are related to increasing financial burdens felt by institutions today. What perhaps are not so clear are the potential benefits or uses of conducting an attrition study. Clearly, a study of dropouts should pay off in terms of giving an institution a better understanding of why students are leaving. In many cases, this better understanding can lead to possibilities for corrective action that might encourage students to remain in school. For example, in a pilot test attrition study,

[1]The term "dropout" will be used throughout this manual to refer to students who drop out, stop out, or transfer to another institution.

[2]The term "stopout" refers to students who choose to leave school for a period of time and generally plan to return.

a recurring complaint of students who left was that residence halls were unsatisfactory in a number of respects. Armed with this knowledge, the institution was in a better position to provide an environment that would encourage students to stay. Other kinds of reasons do not lend themselves so easily to corrective action, but do, at least, provide documentation concerning the reasons particular kinds of students leave school. An example of this was found in a public university pilot study in which a number of students stated that they left because the out-of-state tuition was too high. Being able to identify this reason as a major cause for students' transferring means that the institution can perhaps focus on predicting students who may leave because of high costs, or at least predicting the number of students who will leave for this reason. Also, the awareness of high cost as a reason for leaving for, say, 30 percent of the dropouts, indicates that for this group of students, the institution itself was satisfactory, but other factors (namely, high cost) caused students to leave.

Thus, the potential specific uses of attrition studies are varied but several general kinds of uses can be abstracted:

- to provide information about dropouts that may lead the institution to corrective action;
- to document the numbers and percentage of students who leave for reasons not amenable to corrective action;
- to build models that will allow the prediction of which students will drop out and of the numbers of students who will drop out.

With these concerns in mind, the NCHEMS Information About Students (IAS) project had as one of its primary goals the development of procedures and materials to assist institutions of postsecondary education in conducting attrition studies. It was the intent of the IAS project to develop and pilot test a questionnaire and accompanying procedures that would help institutions understand and explain their individual attrition problems and proceed to appropriate corrective action where possible. Toward this goal, four diverse institutions (Windham College, the University of Colorado, the University of Southern Colorado, and Arapahoe Community College) participated in pilot test attrition studies during 1975. In each case, NCHEMS staff and the institutional administrators in charge of the survey worked closely together to resolve problems as they arose as well as to ensure that the questionnaire met the needs of the individual institution. Based on this year of pilot test effort and the successful completion of four attrition studies, this manual was written as a guide for institutional practitioners to conduct their own attrition studies.

Why a Special Manual for Attrition Studies

Many of the procedures presented in this manual are simply general survey guidelines applied to a particular kind of survey. The question might be asked then: What is the need for a special manual for conducting attrition studies or surveys? In some sense it is true that anyone who is familiar with good survey techniques does not need a manual specifically directed at attrition surveys. It is also true, however, that a number of special

problems arise in trying to survey former students (particularly former students who may be disillusioned or angry with the educational process). There are special problems in identifying the sample of students who have left school, special problems in designing a questionnaire for former students, and special problems in locating and obtaining responses from students no longer in residence at the institution. In addition, individual institutional administrators often lack the time and money to develop a questionnaire and sampling methods specifically for an attrition survey. For all these reasons, it seemed that a special manual concerned with attrition surveys might be useful to practitioners unfamiliar with surveys in general as well as those who are experienced in conducting surveys but have not necessarily conducted an attrition survey.

Overview of the Manual

Section II of the manual is a discussion of suggested survey administration procedures. Included are procedures for identifying dropouts; a discussion of sampling considerations; procedures for estimating the personnel and material costs of conducting an attrition survey; guidelines for mailing the survey, sending a second follow-up mailing to nonresponders, and tracking returned questionnaires; and a checklist of all survey administration activities.

Section III presents suggested data processing procedures, including hand-coding suggestions, keypunching guidelines, guidelines for matching institutional master file information to questionnaire information and a brief discussion of potentially useful statistical/data manipulation packaged computer programs.

In Section IV, data analysis and use are discussed. Included are methods for assessing response bias in the returned questionnaires, standard descriptive statistics recommended for analyzing the questionnaires, suggestions for optional analyses that might be conducted to answer questions specific to particular institutions, and a discussion of using the survey results.

The appendices contain a suggested questionnaire, suggested cover letters, sample mailing and return envelopes, coding schemes, and a suggested key-punching format for the questionnaire.

II

ADMINISTRATION PROCEDURES

This section is a comprehensive description of recommended guidelines for administering a mail survey to former students who have dropped out, stopped out, or transferred. The guidelines given here are based on recommended survey administration practices as well as the experience gained from conducting pilot test attrition studies at four institutions. In many cases, the suggested procedures in this section will have to be modified by individual institutions to meet special needs, and these modifications are to be encouraged. The intent here is not to present rigid rules for conducting attrition surveys, but rather to describe suggested procedures and to point out potential problem areas and possible solutions to these problems. It is recognized that each institution is different from every other and that individual needs and problems will almost certainly exist that lead to deviations from the guidelines in this manual.

The Questionnaire and Cover Letters

A suggested questionnaire for surveying former students who have dropped out is given in Appendix A. This questionnaire was used with minor variations at each of the four pilot test institutions. Included in the questionnaire are:

- demographic/background questions;
- questions concerning the student's status and activities before leaving school;

- an open-ended question concerning the student's reasons for leaving;
- a checklist of reasons for leaving;
- a checklist of questions about the degree of satisfaction with the institution;
- a question asking the student to list three changes at the institution that would have encouraged him or her to stay; and
- questions about the student's current or future plans and activities.

Several items in the questionnaire might routinely require modification by individual institutions:

- Item 3, Student ID Number: If the institution does not use ID numbers, this item should be deleted.
- Item 11, Degree Sought: If the institution does not confer degrees beyond a certain level (such as Master's degree), appropriate response categories should be deleted.
- Item 13, Length of Time Since Dropped Out: If dropouts are sampled from several previous years, extra response categories should be added such as "One year or more, but less than two years," "Two years or more, but less than three years," and "Three years or more."
- Item 14, Student Status: If the institution has no students above a certain level, appropriate response categories should be deleted.
- Item 15, Full-Time versus Part-Time Status: If all students are full-time, this item should be deleted.
- Item 16, Employment Status: If students are not permitted to be employed, this item should be deleted.

- Item 18, Cumulative GPA: If a grading system other than A = 4.0, B = 3.0, and so forth is used, this item should be modified appropriately.
- Items 12, 15, 16, and 17: If the institution uses the quarter system, the word "quarter" should be substituted for "semester" in these items.

It should be noted that where appropriate, items that are essentially the same as those used in the NCHEMS Student Outcomes Questionnaire for Program Completers (Byers, 1975) were phrased identically in the dropout questionnaire. This was done to facilitate comparisons of responses from the two questionnaires for institutions that administer both. Items 1 through 6 and item 11 are identical to the Student Outcomes Questionnaire items 1 through 6 and item 7A.

A question frequently asked by those reading the questionnaire for the first time is whether certain items are actually necessary on the questionnaire since the institution often has the same information on its master file records. These items include: sex, ethnic category, grade point average, major field, length of enrollment, and others, depending on institutional records. A valid argument in favor of not including these items is that the questionnaire can be shortened, which might encourage a better response rate from students. Unfortunately, most institutional master file records are either lacking these data items on 20 percent or more of the students and/or are inaccurate or out of date for a substantial percentage of students. Furthermore, difficulties sometimes arise in matching questionnaires to

master file information. If accurate matches cannot be made for every returned questionnaire, valuable data analysis capabilities may be lost for certain respondents. For these reasons, it is recommended that all items the institution is interested in using be included on the questionnaire itself, and that institutional records be relied on as little as possible.

Because the questionnaire given in this manual is intended to provide a flexible framework for institutions to conduct attrition studies, users should add or delete items from the questionnaire as necessary to tailor it to their individual needs. Items 11 through 21 are particularly subject to change, while in most cases it is probably better not to change items 1 through 10 or items 22 through 25 except for compelling reasons. The less these latter items are changed, the more comparability remains among institutions administering the questionnaire and among subsequent years of administration at a single institution. The Outcome Measures and Procedures Manual (Micek, Service, and Lee, 1975) is a valuable resource for selecting new items to be included in the questionnaire. If questionnaire changes are being considered, the important thing to remember is not to add so many items that the resulting questionnaire becomes too long. Excessive length discourages respondents. The version shown in Appendix A fits on two pages printed on both sides. It is probably best not to exceed this length.

Appendix B shows a suggested cover letter for the initial mailing of the questionnaire and a suggested cover letter for subsequent follow-up mailings to those who did not respond to the first mailing. These letters should be printed on institutional stationery and, if possible, be signed by the

president. Both letters should be taken as prototypes, not as rigid formats. If changes are to be made in them, however, there are several important points that should remain, whatever the final wording:

- The initial letter should convey the importance of a response from the student.
- The initial letter should state that responses will be confidential.
- The initial letter should state awareness that students may have re-enrolled, and assurance that re-enrollment is not affected by receipt of the questionnaire.
- The follow-up letter should re-emphasize that responses will be kept confidential and the importance to the institution of receiving as many completed questionnaires as possible.

Identification of Dropouts

Procedures for identifying those students who have dropped out will necessarily vary depending on the kinds of institutional records kept. Some of the factors that vary across institutions are:

- computerized versus manually kept records,
- withdrawal procedures for students,
- length of time into the next term before dropouts from the previous term can be identified,
- accuracy and extent of records kept concerning withdrawals and nonreturning students.

In almost any institution, there will be two kinds of nonreturning students: Type A--those who register for a term, and either fail to show up for classes or attend classes only for a short period of time, and then decide to withdraw; and Type B--those who finish one term and simply fail to register or return for the next term.[3] Most institutions have some kind of records on the first group because of tuition refund requests and standard withdrawal procedures that students are required to follow, or because of class lists with no grades listed at the end of the term (Type A withdrawals). Generally, no formal records are kept on students who decide not to re-enroll between terms (Type B withdrawals). Figure 1 illustrates the cycle of nonreturning students over two terms.

Institutions generally fall into one of three categories with respect to the degree of computerization of records:

(1) All records are computerized, including registration information each term and withdrawal information (rebates sent, withdrawal status, and so forth); that is, Type A and Type B withdrawals can be identified by computer records.

(2) No records are computerized; that is, all registration and withdrawal information is kept manually.

(3) Some records are computerized and some are maintained manually. Usually, registration information is computerized and mid-term withdrawal and rebate information is not; that is, Type B withdrawals can be identified by computer and Type A cannot.

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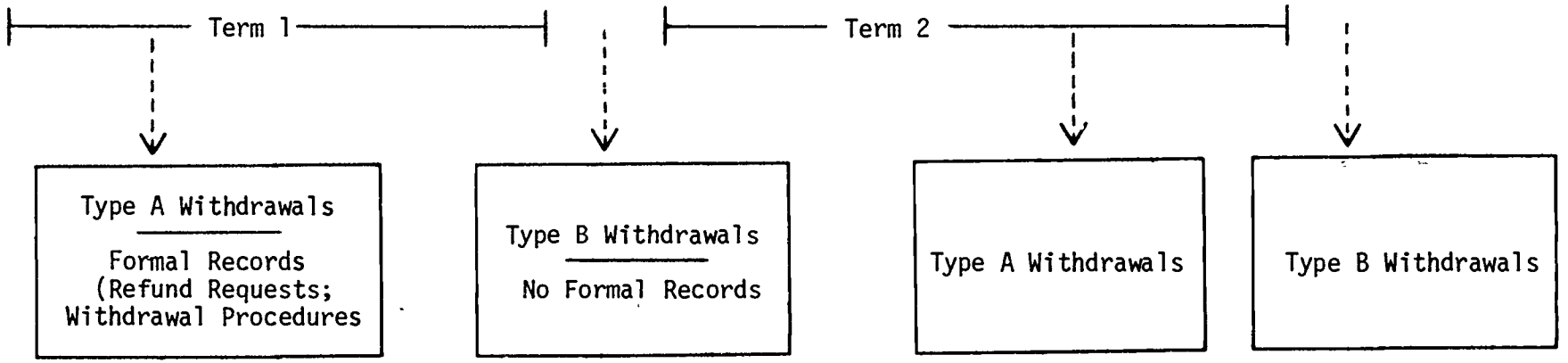
[3]Community colleges are particularly likely to have a large number of Type B nonreturning students who have completed their own planned program but may not have completed any institutionally defined program.

FIGURE 1

CYCLE OF NONRETURNING STUDENTS



Three dropout identification strategies can be developed corresponding to the three categories described above:

(1) All records computerized

(a) To identify mid-term dropouts (Type A) print a list and create a new file of all students who have received a rebate (because of withdrawal), have a withdrawal code indicator, or have any other institutional code indicating that they have dropped out.

(b) To identify between-term dropouts (Type B), match the registration file from the previous term against the current term's registration file. Print a list and create a new file of all students who attended the previous term and who have not registered for the current term (excluding graduates). Graduates can be excluded by matching the new file of students who did not return between terms against the file containing a list of graduates from the previous term, and printing and creating a new file of nonreturning students who are not graduates.

(c) Merge and sort by student ID number the two files resulting from steps (1a) and (1b) above, after first eliminating any duplicate records for the same student.

(2) No records computerized

(a) To identify mid-term dropouts (Type A), compile a list from all available sources of students who can be reliably identified as having withdrawn after registration. These sources might include deans' offices, where withdrawal forms are required for exiting students; the accounting office, where students have requested refunds; and queries of faculty members and student advisors.

(b) To identify between-term dropouts (Type B), obtain lists of registered students for the current and previous term; both lists should be ordered the same way, either alphabetically or by student ID number. Visually compare the two lists name by name, putting a mark by students' names for the previous term who have not enrolled for the current term. Obtain a list of students who graduated the previous term. (This list again should be in the same order as the other two lists.) Visually compare the list of graduates to

the list of students from the previous term who have marks by their names, and indicate with some other symbol those who have actually failed to re-enroll (as distinct from those who graduated). All students thus identified should be listed in the same order as students identified in step (2a) above.

(c) The two lists from steps (2a) and (2b) above should be combined onto one list, after first eliminating any duplicate names.

(3) Registration records computerized; withdrawal form and rebate information not computerized

(a) To identify mid-term dropouts (Type A), follow procedure (2a) above.

(b) To identify between-term dropouts (Type B), follow procedure (1b) above. If a file for graduates from the previous term is not available, obtain a list of graduates (in the same order as the registration computer file) from the previous term and visually compare it to the printed list of between-term nonreturning students. Make a mark by the names of students who are graduates.

(c) If a computer master file exists containing student address information, then all noncomputerized lists should be computerized by keypunching the list of graduated students' ID numbers and the list of students identified in step B. These two sets of cards should then be matched against the address master file at the same time that the new file created in step (3a) above is matched against the address file. A final file should be created of nonreturning students between terms who are not graduates (using the graduate cards) merged with students identified from other sources (in step 3b) as mid-term dropouts.

(d) If a computer master file containing student addresses does not exist, all information should be converted to lists. The computer printout from step (3a) should be merged with the list from step (3b), after first eliminating any duplicate names.

Information Needed on Dropouts

The minimum information needed about each student identified as a dropout is his or her name and a non-campus address. This address may be the student's forwarding address or the parents' address.

Several other pieces of information besides name and address will be valuable in the data analysis stage if it is possible to obtain them. These include the student's sex, ethnic category, grade point average, major field, and other similar kinds of background information that may be available. These data are useful for:

- filling in missing questionnaire responses;
- comparisons of characteristics of students who return a questionnaire versus those who do not; and
- validity checks (if desired) on the accuracy of master file information at the institution.

Two other pieces of information that should be kept for each student in the sample are the term and year of withdrawal (particularly if more than one term of students is sampled).

All data concerning students identified as dropouts (address, background information, and date of withdrawal) should be kept together for each student whether the data are stored as computer records or as written lists.

Sampling Guidelines

In every survey the question must be asked: how many students should be surveyed? Unfortunately, there is no definitive answer to this question.

Generally, the survey administrator must strike a balance between cost considerations and statistical analysis requirements in arriving at a reasonable sample size. In attrition surveys an additional factor, the anticipated response rate, takes on more importance than in most other surveys, since response rates generally are much lower (15 to 40 percent) in surveys of dropouts than in other surveys.

There exist sophisticated statistical methods for estimating the size of the sample needed for good confidence in the reliability of results. These methods, however, require that the survey administrator estimate the magnitude of response differences that are expected from the questionnaire results. Often it simply is not possible to make a good estimate of the expected magnitude of response differences before administering the survey. Rather than use this approach, therefore, it is suggested that the survey administrator aim for a total sample of at least 1,000 students. Sending the questionnaire to 1,000 students should yield between 150 and 400 usable returned questionnaires at a cost to the institution that is relatively low.[4] Schools with small enrollments may have to sample dropouts from several previous years in order to obtain a total sample that approaches 1,000; if there is difficulty in obtaining a sample that large, 750 students is a good lower bound on the size of the sample. Any fewer than 750 may yield too few returned usable questionnaires for reliable analytical conclusions. Schools with large enrollments, on the

[4] See the next section on estimated survey costs for further detail.

other hand, may easily attain a sample size of 1,000 in one term or one year. In this case, the survey administrator will have to decide whether to select randomly from the population of dropouts a sample of 1,000 students or whether simply to survey all identified dropouts within a particular period of time.

There are two other considerations in determining sample size besides cost: statistical validity and response rate. The first relates to the subpopulations of interest in the study. If subgroups (such as ethnic groups, sex, degree categories) are to be analyzed separately, then sufficient numbers of students within each group must be surveyed so that even with a low response rate there will be enough returned questionnaires to analyze as a separate group. For example, if it is intended that graduate students will be analyzed separately from undergraduates, the questionnaire must be sent to enough graduate student dropouts that sufficient questionnaires will be returned to permit valid inferences about the subpopulation of graduate student dropouts. Again, it is difficult to state what a sufficient subgroup sample size is for "reliable statistical analysis." A minimum number of returned usable questionnaires for reliable subgroup analysis is probably 30 students in each group, with 50 students a good number to aim for.

Second, a decision must be made about the number of previous terms from which students will be sampled. If a sufficient number of dropouts can be identified from the most recent year's records, there is little reason

to sample from previous years, since the response rate will be highest for the most recent dropouts and primary interest is in recent dropouts. Some schools (particularly those with small total enrollments) have too few dropouts each year to constitute a good sample by surveying from only one year of students. In this case, the survey should include dropouts from the last several years in order to obtain a good sample, given the expected low response rate.

It is generally not a good idea to survey dropouts from only one term. Very often dropouts between different terms differ on a number of characteristics, including their reason for leaving. For example, nonreturning students between spring and fall terms often leave to transfer to another school, while mid-year and mid-term dropouts more frequently leave for other such reasons as personal, emotional, or financial difficulties. Therefore, even if enough students have dropped out in one term to constitute an adequate sample, it is recommended that the survey include dropouts from each term throughout the year.

One final factor should be considered in developing the sample of students to be surveyed. This factor concerns the permanent address records kept on students at the institution. Usually from 10 to 20 percent of the students either have foreign permanent addresses or invalid permanent addresses. Since postage to foreign countries is variable but always substantially higher than within the United States, the survey administrator may want to exclude these students from the survey. Students with no permanent address (or obviously incorrect or incomplete addresses) will also have to be

eliminated from the survey. The usual procedure for eliminating these students is to identify the sample of dropouts and, while addressing the envelopes, omit those students for whom there is a foreign address or an incomplete, incorrect, or missing address. When planning for a particular sample size, therefore, the survey administrator should keep in mind the fact that some percentage of the sample (usually 10 to 20 percent) may be excluded from even receiving a questionnaire because of permanent address problems. If random sampling is used to obtain a final sample of 1,000 students or if a school is combining dropouts from several previous years to obtain a final sample of 1,000, it is a good idea to aim for an initial sample of 1,100 or 1,200 dropouts with the awareness that 100 to 200 students may have permanent addresses that cause them to be eliminated from the survey.

Costs, Materials, and Personnel

The following is a list of materials with estimated costs required for an initial mailing to 1,000 students (estimated costs for larger or smaller samples of dropouts should be proportional):

	Materials	Explanation	Estimated Cost[5]
1.	1,000 questionnaires	Two pages, printed both sides	$ 45.00
2.	1,000 cover letters	Printed on official stationery with president's signature	10.00
3.	1,000 mailing envelopes[6]	Standard business size	15.00
4.	1,000 return envelopes	Envelopes should be addressed to institution, and should be printed with mailing permit for bulk rate return. ($15 for printing plus $35 for estimated 200 returned questionnaires @ 15¢ each.)	50.00
5.	1,000 first class commemorative postage stamps	First class stamps allow mail to be forwarded. Commemorative stamps increase response rate because envelope looks more personal	130.00
6.	1 "PLEASE FORWARD" stamp	All mailing envelopes should be stamped "PLEASE FORWARD"	2.00
7.	1,000 computer printed address labels		(Variable)
	or		
8.	Typist to type addresses on mailing envelopes		(Variable)
		TOTAL	$252.00 (plus variable costs)

All items in the above list are self-explanatory, except perhaps items 7 and 8 concerning address labels. Either the institution must produce computerized address labels or addresses must be typed on each envelope by a typist. It is strongly recommended that labels be produced by computer

[5] As of February 1976.

[6] Examples shown in Appendix C.

if possible, even if the original list of addresses for dropouts was not computerized. It generally costs no more to have a list of names and addresses keypunched onto cards than to have the same list typed onto envelopes. Once the list has been keypunched, however, it can be repeatedly used for different purposes, whereas addresses typed onto envelopes serve only one purpose and must be retyped any time another list is needed. Keypunched cards can be used to produce:

(1) lists of sample students,

(2) name and address labels for the initial mailing of questionnaires, and

(3) name and address labels for subsequent mailings of questionnaires.

In conducting an attrition survey, a decision must be made concerning whether to mail the survey only once or to send one or more follow-up sets of materials to dropouts. In the authors' experience, one follow-up mailing can yield a substantial gain in the total number of returned questionnaires (from 50 to 70 percent more returned questionnaires), while more than one follow-up mailing has only limited return. Nevertheless, some schools, primarily for budgetary reasons, may decide not to send any follow-up materials. Materials and costs for a follow-up mailing of questionnaires are proportional to those in the initial mailing. Generally about 200 usable questionnaires will be returned from a first mailing of 1,000 questionnaires, so that the total cost of a second mailing to 800 students will be approximately 80 percent of the initial cost of $252.00. Note that subsequent mailings are assumed to include a complete set of materials. The alternative is to send

a postcard reminder rather than a full set of materials. It is recommended that the full set of materials be sent for follow-up mailings because the cost is not much more than for a postcard reminder, and students will then receive a replacement questionnaire and return envelope in case they have lost or thrown away the first set. A postcard currently costs nine cents plus approximately two cents for a printed reminder for a total of eleven cents to send. Each complete set of questionnaire materials costs approximately 25.2 cents to send. In terms of the anticipated benefits of sending a complete set of materials for the second mailing, the increased cost of 14.2 cents per student is probably worth the expenditure.

It should be remembered that second and subsequent mailings require a new cover letter such as that shown in Appendix B.

An additional enclosure that institutions may want to include, at least for the initial mailing, consists of some variation of a three by five card with a dime taped to it and a message printed on it that says:

> We'd like to buy you a cup of coffee while you take a few minutes to fill out the enclosed questionnaire. Thanks for your help.

The cost for this "gimmick" is about 2 cents for the printed card plus the dime or a total of 12 cents per questionnaire ($120 for 1,000 questionnaires). There is limited utility in including this card in second and subsequent mailings.

The other costs incurred in conducting an attrition survey are primarily personnel costs. It is difficult to put dollar amounts on these costs since they will vary from institution to institution depending on salaries and time invested by various people. The following list of potential personnel requirements is given without estimated costs:

- Survey administrator
- Secretarial time for typing questionnaire and cover letter drafts and final copies
- Computer personnel time for creating dropout lists and address labels (or clerical time if lists are created by hand plus typist time for typing envelope names and addresses)
- Approximately 20 hours of clerical time for stuffing and mailing 1,000 questionnaires
- Clerical time for recording and tracking returned questionnaires
- Keypuncher time for punching responses to returned questionnaires
- Computer-data analyst time for analyzing returned questionnaires
- Report-writer's time
- Secretarial time for typing report.

Mailing Guidelines

The initial mailing of questionnaires can begin as soon as all the materials listed in the previous section are assembled together (the questionnaire, cover letter, two kinds of envelopes, address labels, postage, and rubber

stamp) along with a list (in the same order as the address labels or typed addressed envelopes) of each student's ID number, name, and address. This list can be and probably should be the survey status list shown in Figure 2. The process of stuffing and preparing the materials will take approximately 20 person-hours for 1,000 questionnaires. The following steps should accomplish the task of assembling and preparing the materials for mailing:

(1) Eliminate invalid, missing, or foreign address labels by marking an "X" through them. (If typed envelopes are used, this should be done at the time of typing.)

(2) Eliminate students with invalid, missing, or foreign addresses from the list of students.

(3) Number the self-addressed return envelopes from 0001 to the number of valid address students in the sample in the lower left-hand corner of the envelope in ink.

(4) Number on the list each remaining student who has a valid address with the same consecutive numbers as in step (3).

Steps (3) and (4) are done so that returned questionnaires with incorrect or insufficient identifying information can be matched to the student's name and ID number if desired.[7]

[7] An alternative to assigning new consecutive numbers from 0001 to the number in the sample in steps (3) and (4) is to eliminate step (3) and simply write the student's ID number on the return envelope rather than assign a new four-digit number. The advantage of using the student's ID number is that no intermediate step is required to match the return envelope with the student if a questionnaire is returned with no identifying information filled in. The disadvantage is that students may be disturbed to see their ID number written on the return envelope, and there may also be some question of the legality of using the student ID in this way. Considering the few times this number will actually be used, it is recommended that the consecutive numbering system be used rather than the student's ID number. The purpose of this number may be stated in the cover letter if the institution so desires.

FIGURE 2

SUGGESTED FORM FOR LISTING OF (INSTITUTION) ATTRITION STUDY SAMPLE AND SURVEY STATUS

RETURN ENVELOPE NUMBER	ID	NAME	ADDRESS	FIRST MAILING			SECOND MAILING			
				UNDELIVERABLE	UNUSABLE	USABLE	DATE SENT	UNDELIVERABLE	UNUSABLE	USABLE

(5) Fold the cover letter and questionnaire together to fit into business envelope.

(6) Glue postage stamps to mailing envelopes.

(7) Stamp mailing envelope with "PLEASE FORWARD."

(8) Place mailing label on mailing envelope (unless envelopes are already typed with addresses), and at the same time, insert return envelope inside. The number on the return envelope from step (3) must match student's name and address label.

(9) Put folded questionnaires and cover letters in each mailing envelope.

(10) Seal envelopes.

(11) Sort envelopes by local and out-of-town mail.

After the initial mailing has been completed, a set of tracking sheets should be prepared for recording the status of the questionnaires as they return. Figure 2 shows a sample tracking sheet. If institutional records are computerized or if names and addresses of students were keypunched to produce labels, these tracking sheets can be produced by the computer; otherwise, they must be typed. The tracking sheet should contain:

(1) Student's ID number

(2) Student's name

(3) Student's address

(4) Blank columns for recording the <u>date</u> any of the following information was received:

(a) Date returned by post office as undeliverable.

(b) Date unusable questionnaire returned or letter received; student ineligible or unable to respond (student improperly identified as dropout, refuses to respond, deceased, and so forth).

(c) Date usable questionnaire returned.

(5) Blank columns for recording second and subsequent mailing information (if a second mailing is planned):

(a) Date second set of materials sent.

(b) Date returned by post office as undeliverable.

(c) Date unusable questionnaire or letter received; student ineligible or unable to respond.

(d) Date usable questionnaire returned.

Figure 3 shows a tracking sheet with examples of entries by the school.

As questionnaires are returned, one person should be in charge of recording the above information for each student. Some kind of identifying mark (such as a check [✓]) should be placed on each questionnaire as the proper information is recorded on the tracking sheets. If possible, the person who records the information should also open the envelopes to ensure that questionnaires with insufficient identifying information can be matched to the correct student's name and ID by using the number written on the return envelope. It is a good idea, also, to save all returned materials (even undeliverable questionnaires) until the end of the survey.

FIGURE 3

EXAMPLE OF LISTING OF WESTERN COLLEGE ATTRITION STUDY SAMPLE AND SURVEY STATUS

RETURN ENVELOPE NUMBER	ID	NAME	ADDRESS	FIRST MAILING			SECOND MAILING			
				UNDELIVERABLE	UNUSABLE	USABLE	DATE SENT	UNDELIVERABLE	UNUSABLE	USABLE
0001	0122356	Mark Andrews	314 W. 8th Ave. Norfolk, VA 10823	2/9						
0002	9262230	Alice Byers	Apt. 3B 9815 Maryland Ave. Los Angeles, CA 98122			2/15				
0003	1135976	Robert Davis	213 E. 11th Street New York, NY 10220				2/29			3/15
	26391120	~~John Edwards~~	Via Gregorio Allegri 3 ~~Rome, Italy~~							
0004	4399178	Susan Ford	91 Brand Drive Rockaway, NY 11691		2/11					
0005	2123947	David Harris	123 Table Mesa Drive Boulder, CO 80303			2/11				

Follow-up mailing procedures are essentially the same as the initial mailing procedures.[8] As has been mentioned previously, a new cover letter must be prepared. Except for this change, all materials are the same. A new set of materials should be sent to each student on the tracking sheet for whom no information is recorded in any of the three "First Mailing" columns. Also, the date that the second mailing is sent should be recorded for each student to whom a new set of materials is sent.

The best time to send follow-up materials is whenever the responses from the first mailing begin to trail off in frequency; that is, if 20 questionnaires a day are being returned, then 10, then two a day, it is fairly safe to assume that the response peak has been reached, and that the second mailing can be sent. This point will usually be reached about three to four weeks after the initial mailing.

If it is considered desirable to be able to distinguish late responses from the first mailing from responses to the second mailing, the questionnaire for the second mailing can be printed on a different color paper.

The survey administration steps and materials are summarized in the following checklist:

---

[8] An alternative follow-up procedure useful in metropolitan areas where all of the sample is within local phone distance is a telephone follow-up. While this method was not used in any of the four pilot tests conducted, it has been shown to be quite effective in other surveys. A telephone follow-up is conducted by calling each student in the sample about one week after the initial mailing to ask (in a positive manner) if he or she received the questionnaire and if there are any questions. The caller can also emphasize the importance of the survey and urge the student to return the questionnaire.

Checklist of Survey Administration Activities

I. Prepare questionnaire and cover letter

   A. Modify items as necessary

   B. Review questionnaire and cover letter with potential users of results

II. Sample identification

   A. Decide number of previous terms or years to sample

   B. Decide on sample size

   C. Identify students who have dropped out

   *D. Randomly sample from all identified dropouts

   E. Produce printed list and/or computer file of dropouts

III. Materials

   A. Questionnaire

   B. Cover letter

   *C. Follow-up cover letter

   D. Mailing envelopes

   E. Return envelopes

   F. Postage stamps

   G. Rubber stamp

   H. Address labels

   I. Tracking sheets

IV. Mailing

   A. Need 20 hours clerical time per 1,000 questionnaires

   B. Record status of returned questionnaires on tracking sheets

   *C. Follow-up mailing 3 to 4 weeks after first mailing

---

*Optional steps.

III

CODING AND DATA PROCESSING GUIDELINES

Once the questionnaire has been administered and responses received, the next step in the survey is to prepare the returned questionnaires for analysis by visual editing, hond coding where necessary, and, finally, keypunching. This section of the manual provides guidelines for each of these steps as well as suggestions for computer editing of responses, matching the keypunched questionnaires to existing computer master files and suggestions concerning useful statistical/data manipulation packaged computer programs.

Hand Coding and Visual Inspection of Returned Questionnaires

It is generally a good idea to inspect 20 returned questionnaires visually before having them keypunched to ensure that students followed directions and that no consistent problems occurred in the kinds of responses received for each questionnaire. Any new items added by the institution are the most likely areas where problems might have occurred, though all items should be scanned for 20 or so sample questionnaires.

The only items requiring hand coding for the questionnaire given in Appendix A, (without modifications) are:

- Item 10: Student's description in own words of reason for leaving
- Item 20: Student's major field of study
- Item 2: Student's home state
- Item 25: Name of institution student plans to attend
- Items 17, 22, and 25: "Other" category, if desired.

Item 10, the student's description of his or her reason for leaving either may be coded for keypunching by having a reader interpret each response and assign a numeric code to each different one, or may simply be used at the time of report writing as a source of direct quotes from students and back-up material in substantiating other findings. Generally, the reasons given in item 10 will not basically differ from the responses to question 22, the check-off list of reasons for leaving, and therefore the institution need not hand code item 10 responses unless there is a particular reason for doing so.

Item 20, the student's major field of study, may be coded using numeric codes defined by the institution for each major field, using the set of codes found in the NCHEMS Student Outcomes Questionnaire for Program Completers (reproduced in Appendix D), or using some other set of categories. If the NCHEMS categories or some other standard set of major field categories are used, the data can be compared more easily to data from other institutions or other data sources. If, on the other hand, the primary use of the survey results is for internal purposes and the institution already has existing major field categories, internal data comparisons may be facilitated by using the already existing institutional categories.

Item 2, the student's home state, can be coded in several ways:

(1) The U.S. post office two-letter alphabetic codes can be assigned. This method has the advantage of being easy, with few mistakes being made by the coder, and the disadvantage of requiring recoding by a computer program from alphabetic codes to numeric codes for most analytical purposes. Appendix E shows the post office's two-letter codes.

(2) Two-digit numeric codes from 01 to 51 can be assigned. This method requires somewhat longer coding time, but is immediately usable in analytical tabulations because the categories are numeric. Appendix E shows two-digit numeric codes for states.

(3) The student's home state can be dichotomized to "in-state" versus "out-of-state," codes "1" and "2." These two categories are very easy to code, but result in some loss of information. In many attrition surveys, however, the only real interest in this variable is in whether or not the student is a resident, in which case, this coding scheme is the method of choice.

Hand coding of the "other" category in items 17, 22, and 25 can be accomplished if desired by assigning new category numbers to each unique "other" response. For example, item 22 already has 25 responses, so the first unique "other" response should be assigned the number "26."

Item 25, the name of the institution in which a student plans to enroll or is currently enrolled can be coded in one of three ways:

(1) A set of numeric codes for commonly mentioned institutions can be devised, and a final category for "all others" assigned. This coding scheme is best when a number of students plan to attend other nearby institutions, and when the institution conducting the survey is interested in tabulating other institutions to which its students are transferring.

(2) Two-digit numeric or alphabetic post-office codes can be assigned to the state where the institution in which the student plans to enroll is located (shown in Appendix E).

(3) Four-digit numeric codes from the Federal Interagency Committee on Education (FICE) can be assigned for each institution.

Item 24 (three factors that would have encouraged the student to stay at the institution) may require hand coding for students who wrote in descriptions rather than numeric codes corresponding to their descriptions of factors. For

example, a student might choose "quality of the school" as a factor that, if changed for the better, would have encouraged him or her to stay. If he or she wrote this response in rather than writing in "24," a hand coder will have to write in the appropriate numeric code.

All hand coding should be done by a person who has been given explicit coding instructions. The coder should also be told to set aside all questionnaires for which there are ambiguous responses so that the survey administrator can make decisions for these responses. Hand coding should be done using a brightly colored magic marker, or similar writing instrument.

Keypunching

The questionnaire shown in Appendix A requires two cards per respondent. A suggested keypunching format is given as Appendix F. If any items are added or altered, the keypunching format also must be appropriately modified. It is a good idea to have the cards verified by the keypuncher; verification will nearly double the cost of keypunching, but will eliminate many punching errors. If possible, the keypuncher should be instructed to call the survey administrator about any ambiguities he or she finds while punching the responses.

Computer Editing

In the process of any questionnaire survey, mistakes are bound to occur in recording responses. These errors may be the student's in not following directions, the hand coder's, or the keypuncher's. There are two basic kinds of errors that can be detected by editing using the computer:

(1) Responses may be out of acceptable ranges for each item. For example, one or two students may have sex codes of 3. This type of error can be detected by inspection of preliminary frequency distribution of all responses to the questionnaire for all students using a package program such as the Statistical Package for the Social Sciences (SPSS). Alternatively, a special computer program can be written that checks for out-of-range responses to each item for each questionnaire and prints a message when an error is found. Correction of errors consists of locating the original questionnaire for which an error occurred, and then correcting the appropriate card columns.

(2) Logically inconsistent responses may be found among pairs or sets of responses to the questionnaire. There are few sets of items in the questionnaire given in Appendix A for which logical inconsistencies may be checked, but the addition or modification of items may add to this list. One such inconsistency is a student responding to item 11, degree sought, with choice number (7), doctoral degree, for example, and also indicating in question 14 that he or she is a sophomore. These types of errors can be detected only by a special program written to compare pairs or sets of responses for each student, and programmed to write an error message when an inconsistency occurs. Correcting consists of correcting the keypunched cards after checking with the original questionnaire to see what the correct responses are. In many cases, these types of errors exist even on the questionnaire (because the student made a mistake in responding to an item). If this is the case, a judgmental decision must generally be made as to which response is correct, and other responses changed to "blanks" or "no response" by deleting responses from the appropriate card columns.

From the above editing suggestions, it can be seen that it is important to keep the original questionnaires sorted in the same order as the cards, generally in student ID number order. By keeping the questionnaires sorted, it will always be easy to find quickly a particular questionnaire needed for editing verification or any other purpose.

Matching Questionnaire Data to Master File Data

If the institution has a computerized master file of the sample of dropouts with student information that is desired to match with the questionnaire

information, a computer program can be written to accomplish this. Both files must be sorted in the same order, of course. It is a good idea to match corresponding records with as much information found on both files as possible. That is, if student ID, date of birth, and sex code are on the master file (as well as on the questionnaire), then all duplicate information must match before a match of the two records is considered correct. By using additional duplicate pieces of information to match records, the possibility of matching errors caused by incorrectly punched ID numbers will be minimized. Where incorrect ID numbers are found on questionnaires, a resolution of the errors must be made by reference back to the original questionnaires, followed by correction of the cards. The resulting matched information can be stored as a new card for each respondent or all information can be stored on tape or disk as one record for each respondent.

For certain purposes, primarily related to checking response bias, the institution may want to create also a new master file containing codes for all types of responses received from students. The kinds of information that might be desired are:

(1) Usable questionnaire returned

(2) Student excluded from sample because of improper or foreign permanent address

(3) Student deceased

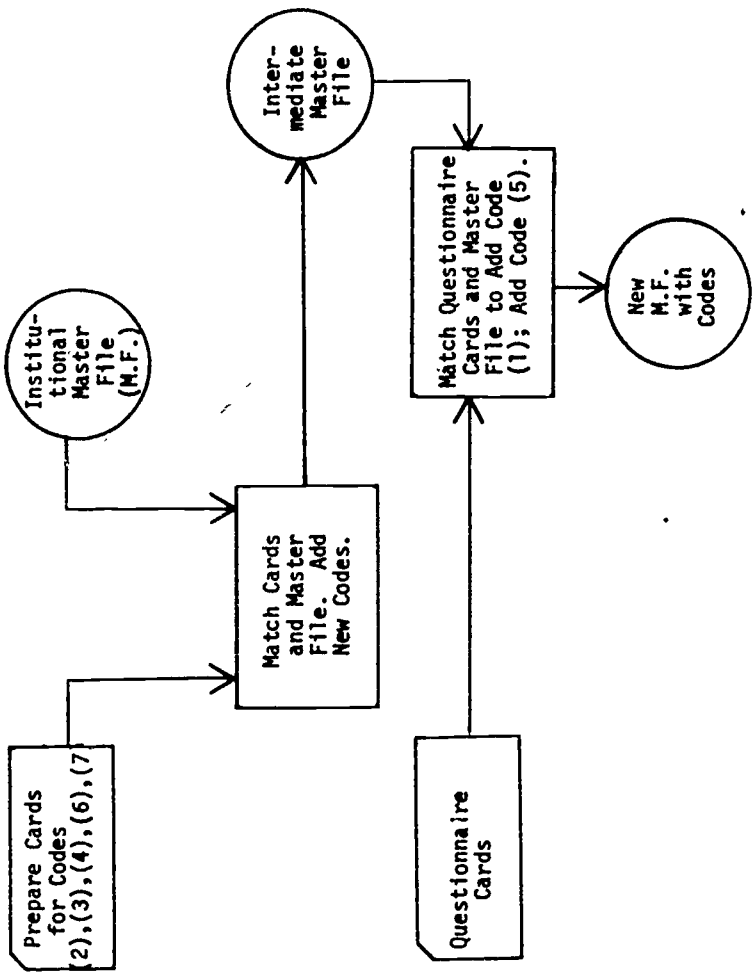
(4) Questionnaire returned by post office as undeliverable mail

(5) No questionnaire returned

(6) Unusable questionnaire returned.

FIGURE 4

FLOWCHART OF STEPS REQUIRED TO IDENTIFY STATUS OF ALL STUDENTS IN ATTRITION SURVEY



If mistakes were made in separating graduates from nonreturning students, a seventh code can be added for those students who send explanatory letters back:

(7) Student graduated.

These codes can be added to the master file by punching a card for each student who can be identified as code (2), (3), (4), (6), or (7) containing the student's ID number and the appropriate code and matching these cards against the master file. Code (1) (usable questionnaire returned) can be added to the master file by matching the questionnaire cards against the master file. Code (5) is then defined as all master file records that do not have a code. Figure 4 illustrates this procedure.

The analyst may now use the new master file with codes to describe similarities and differences among various coded groups. In particular, it is often useful for assessing response bias to compare master file information between respondents and nonrespondents.

Packaged Computer Programs

There are two main functions for which packaged computer programs are needed in attrition surveys. One is for manipulation of the data and selection of subsamples, and the other is for actual analysis of the data. There are two commercially available packaged computer program systems that each perform both functions. These are OSIRIS (1973) and SPSS (1975). A third set of packaged programs is BMD (1973), although this package has limited utility in performing data manipulation and subsample selection functions.

IV

DATA ANALYSIS

The data analysis phase of almost any survey, including an attrition survey, consists of a basic core of descriptive statistics (frequencies, percentages, means, standard deviations, and so forth) summarizing the questionnaire responses combined with as much or as little additional statistical analysis as time, money, and interest permit. In addition to basic questionnaire analyses, the data analysis phase often includes an assessment of the degree of response bias that may exist in the group of students who chose to respond to the questionnaire when compared to the rest of the sample who chose not to respond. This section on data analysis, therefore, presents guidelines for performing basic descriptive statistical analyses of the questionnaire and assessing response bias. Also included is a brief discussion of potential analyses that go beyond the descriptive stage.

Basic Descriptive Analyses

Basic descriptive analyses of the returned questionnaire responses usually consist of frequencies (counts) and percentages of the number of students who responded to each option of each question. Percentages for each questionnaire item should be calculated using the total number of actual respondents (excluding those who left the item blank) as the base. The percentage of nonrespondents for each item is calculated by dividing the number of nonrespondents by the total sample of returned questionnaires. Thus, each item should be tabulated similarly to the example given here for civil rights category of respondents (351 returned questionnaires):

6. Civil Rights Category

N	%		
2	0.6	(1)	American Indian or Alaska Native
5	1.5	(2)	Asian or Pacific Islander
51	15.0	(3)	Black/Negro
13	3.8	(4)	Hispanic
270	79.2	(5)	White, Other than Hispanic
341	100.0*		TOTAL

10 nonrespondents (2.8%)
*Because of rounding error, column does not total to 100.0.

Note that, as was the case in the above example, the percentages for each response category may not total exactly 100.0 percent. The usual procedure for dealing with this occurrence is to record 100.0 as the TOTAL percent and with an asterisk and corresponding footnote indicate that the individual percentages may not total to 100 percent because of rounding error.

For questionnaire items that have an underlying scale, it is appropriate to calculate the mean, standard deviation, and median response. Such items include number of terms enrolled, number of months since withdrawal, number of hours employed per week, grade point average, and number of changes of major. In addition, for each subpart of questions 22 and 23 (reasons for leaving and satisfaction with aspects of the institution, respectively), means and standard deviations can be calculated. The means for each subpart of these two questions can be interpreted as weighted measures of the importance of a particular reason for leaving across all students for item 22, and of the degree of satisfaction of students with aspects of the institution for item 23. The standard deviations are measures of the variability or dispersion of the

students' responses to each subpart. The means for these two questions are particularly useful for quickly evaluating the relative importance of each subpart in relation to other subparts. For example, mean responses to the employment section of item 22 (reasons for leaving) might be 1.3, 1.1, 1.0, and 2.0 for subparts (10) through (13). Two conclusions can be drawn from these results: (1) employment problems range fron "no reason" to a minor reason for leaving school for students who responded to the survey; and (2) the problem of not being able to find a job with a mean of 2.0 is a substantially more important reason why students left the institution than any of the other three employment reasons.

All the basic descriptive analyses suggested above can be done not only for the total sample of respondents but also for various subgroups of the sample that may be of interest to analyze separately. Subgroups that are frequently of interest are:

- males and females
- ethnic groups
- married and single students
- degree types
- undergraduates and graduates
- full-time and part-time students
- employed and unemployed students

Assessing Response Bias

Response bias exists when the students who choose to respond to a questionnaire survey differ systematically from the total sample of students who were sent

questionnaires. Generally response bias operates such that actual respondents tend to be more concerned, more interested, or more enthusiastic, and to have stronger views than those who choose not to respond to a survey. In attrition surveys, actual respondents will tend to have stronger views and may have more positive feelings about school in general than nonrespondents.

There are two general approaches in survey research to the problem of assessing response bias. One approach is to isolate a small random sample of nonrespondents to the survey and make every effort to get valid returned questionnaires from this group for comparison with those who originally returned questionnaires. Usually this approach is not feasible, primarily for cost reasons, in any but the largest surveys. The other approach, which can easily be done in a small survey effort, is to examine the characteristics of respondents and nonrespondents using demographic/background data available in the institutional master file records. Typically, institutions have in their records such information as:

- sex
- ethnic category
- home state
- age
- degree sought
- major field
- grade point average
- number of terms enrolled
- date of withdrawal.

An assessment of differences between respondents and nonrespondents for these types of characteristics can be made by comparing percentages and means for the two groups. For example, the respondents may be 56 percent women while nonrespondents are 49 percent women, and the average age may be 19 for respondents and 22 for nonrespondents. In many cases, the differences may be negligible between the two groups, indicating little response bias at least in terms of the characteristics on which the students were compared, but in some cases there will be moderate to substantial differences between respondents and nonrespondents. The important point in investigating the response bias question is to document any comparisons that were made between the two groups and to exercise caution in interpreting questionnaire results to the extent that it is believed respondents may represent a biased group.

Other Data Analyses

There are numerous analytical directions for using the questionnaire data that might be pursued beyond the basic descriptive analyses suggested here. These include intercorrelating items to investigate relationships among variables, building predictive models (perhaps using multiple regression techniques), and testing hypotheses. These analyses will not be discussed here because they generally require considerable training in statistics and data analysis that is beyond the scope of this paper to discuss. Two factors should be borne in mind, however, when more sophisticated analyses such as those mentioned are contemplated. First, most hypothesis testing and model building techniques depend for their validity on good sampling methods and results. Second, for many purposes, it may be necessary to administer the questionnaire (with suitable

modifications) to a random sample of non-dropouts. For example, if a multiple regression model is to be constructed for predicting dropouts versus non-dropouts, comparable data must be collected from both groups. Similarly, if hypotheses are to be tested concerning differences between dropouts and non-dropouts, it is again necessary to have data from both groups.

Using the Survey Results

Clearly, an attrition survey is of little value if the results and conclusions gained from the study are not used by the institution as feedback concerning the reasons why students leave, the degree of satisfaction with the institution of withdrawing students, and the characteristics of dropouts. Ideally, the survey results would form one set of objective data from which decisions for institutional change could be made. Where institutional change is not possible or is undesirable, survey results serve the useful purpose of providing documentation concerning the numbers and characteristics of students who drop out and their reasons for doing so.

As a minimum, the results of an attrition survey should be carefully documented in a summary report that includes:

- purpose of the survey and major questions
- methodology (sampling, response bias, response rate, administration procedures, problems encountered)
- results for the total sample (frequencies, percentages, means, standard deviations, and so forth)

- important results for subgroups of the sample
- comparison of results with previous studies
- conclusions and recommendations.

In the larger view, students who leave the institution without completing a program are one part of the total flow of students through the institution. While surveying dropouts may be of special interest to many institutions, particularly because of current financial burdens, many institutions may also be interested in constructing a profile of characteristics and interests of students at each important stage in the student flow process. That is, some institutions may want to build complete models of student flow, one part of which is an attrition survey. Such a model can be useful both for documenting the numbers and characteristics of students entering and leaving the institution in various ways (for example, entering freshmen, entering transfer students, exiting dropouts, exiting transfer students, and exiting graduating students), and also for providing a complete profile of students attending the institution. As the institution continues to obtain objective data concerning its students, there is increased ability to make meaningful comparisons among various groups of students and among the same groups of students over time; that is, to assess change. And as institutional planners and managers have better knowledge about their students, they are able to make better, more informed decisions about student needs and plans.

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APPENDIX A

QUESTIONNAIRE

(NAME OF INSTITUTION)
CONFIDENTIAL QUESTIONNAIRE FOR
NONRETURNING STUDENTS

1. Name _____ (Last) _____ (First) _____ (M.I.) _____ / _____ (Month / Year)

2. Home Street Address _____

City _____ State _____ Zip Code _____

3. Student ID Number _____

4. Date of Birth _____ / _____ (Month / Year)

5. Sex: ____(1) Female ____(2) Male

6. Civil Rights Category (PLEASE CHECK ONE)
(✓)

____(1) American Indian or Alaska Native
____(2) Asian or Pacific Islander
____(3) Black/Negro
____(4) Hispanic
____(5) White, Other than Hispanic

7. Marital Status (PLEASE CHECK ONE)
(✓)

____(1) Not married, no children
____(2) Not married, with children
____(3) Married, no children
____(4) Married, with children

8. If married, is spouse a student? ____(1) Yes ____(2) No

9. Are you a veteran? ____(1) Yes ____(2) No

10. Please briefly describe the reasons why you left school.

_____

_____

_____

11. Which one of the following degrees or certificates were you working toward at the time you left school?
(PLEASE CHECK ONE)
(✓)

____(1) Certificate
____(2) Diploma (other than those listed below)
____(3) Associate degree
____(4) Bachelor's degree
____(5) Master's degree
____(6) Professional degree (includes only dentistry, medicine, optometry, osteopathy, podiatry, veterinary medicine, law, and theology)
____(7) Doctor's degree (e.g., Ph.D., Ed.D., D.B.A.)
____(8) Special Student

12. How long were you enrolled before you left school? (PLEASE CHECK ONE)
(✓)

____(1) Less than one semester
____(2) One semester, but less than one year
____(3) One year or more, but less than two years
____(4) Two years or more, but less than three years
____(5) Three years or more

13. How many months has it been since you withdrew from school? (PLEASE CHECK ONE)
(✓)

____(1) One month or less
____(2) Two to six months
____(3) Seven months to one year
____(4) More than one year

14. What was your status at the time you left? (PLEASE CHECK ONE)
(✓)

____(1) Freshman
____(2) Sophomore
____(3) Junior
____(4) Senior
____(5) Graduate or Professional School Student
____(6) Special Student

15. During the last two semesters (or less) that you were enrolled, were you primarily:
(PLEASE CHECK ONE)
(✓)

____(1) A full-time student
____(2) A part-time student
____(3) Both during the last two semesters

16. During the last two semesters (or less) that you were enrolled were you employed in a job:
(PLEASE CHECK ONE)
(✓)

____(1) Not employed at all
____(2) Employed 1-10 hours/week
____(3) Employed 11-20 hours/week
____(4) Employed 21-35 hours/week
____(5) Employed 36 or more hours/week

17. Which of the following types of financial aid were you receiving at any time during the last two semesters (or less):
(CHECK ALL THAT APPLY)
(✓)

____(1) None
____(2) Scholarship
____(3) Loan
____(4) Work/study
____(5) GI Bill
____(6) Other, (please specify) _____

18. What was your cumulative overall grade point average (GPA) at the time you left school (based on a 4.0 system)? (PLEASE FILL IN)

_____

19. Were you ever on academic probation while enrolled? (PLEASE CHECK ONE)
(✓)

____(1) Yes
____(2) No

20. What was your last major? _____ If major undeclared, check here ____

21. How many different times did you change majors while enrolled? (PLEASE CHECK ONE)
(✓)

____(1) Never declared a major field of study
____(2) Never changed majors
____(3) One time
____(4) Two or more times

22. Listed below are several reasons why a student might leave school. To what extent are these your reasons for leaving this school? (CHECK THE APPROPRIATE RESPONSE) (✓)

	Major Reason 4	Moderate Reason 3	Minor Reason 2	Not A Reason 1
Academic				
(1) Low grades				
(2) Found courses too difficult				
(3) Inadequate study techniques or habits				
(4) Needed a temporary break from studies				
(5) Major or courses not available at this school				
(6) Unsure of major and needed to leave school to decide on possible careers				
(7) Course work not challenging				
(8) Learned what I came to learn				
(9) Dissatisfaction with major department				
Employment				
(10) Conflict between job and studies				
(11) Accepted a job and didn't need more school				
(12) Went into military service				
(13) Couldn't find a job				
Financial				
(14) Not enough money to go to school				
(15) Applied but could not obtain financial aid				
(16) Financial aid was not sufficient				
(17) Child care not available or too costly				
(18) This school too expensive				
Personal Circumstances				
(19) Found study too time-consuming				
(20) Home responsibilities were too great				
(21) Illness, personal or family				
(22) Personal problems				
(23) Fulfilled my personal goals in schooling				
(24) Marital situation changed my education plans				
(25) Moved out of the area				
Other, (please specify) _____				

23. Please check the appropriate box describing your degree of satisfaction with the following aspects of the school you left.

		Degree of Satisfaction					
		None	Little	Moder-ate	Much	Great	Does Not Apply
(1)	Counseling/guidance services	___	___	___	___	___	___
(2)	Academic advising services	___	___	___	___	___	___
(3)	Library services	___	___	___	___	___	___
(4)	Employment opportunities	___	___	___	___	___	___
(5)	Financial aid opportunities	___	___	___	___	___	___
(6)	Cost of attending this school	___	___	___	___	___	___
(7)	Enrollment size of this school	___	___	___	___	___	___
(8)	Rules and regulations at this school	___	___	___	___	___	___
(9)	Extra-curricular opportunities	___	___	___	___	___	___
(10)	Intellectual stimulation	___	___	___	___	___	___
(11)	Cultural opportunities	___	___	___	___	___	___
(12)	Social opportunities	___	___	___	___	___	___
(13)	Religious environment	___	___	___	___	___	___
(14)	Recreational facilities	___	___	___	___	___	___
(15)	Location of this school	___	___	___	___	___	___
(16)	Residence/living accommodations	___	___	___	___	___	___
(17)	Grading system	___	___	___	___	___	___
(18)	Course content in your major field	___	___	___	___	___	___
(19)	Teaching in your major field	___	___	___	___	___	___
(20)	Amount of contact with your teachers	___	___	___	___	___	___
(21)	Scheduling of classes	___	___	___	___	___	___
(22)	Relevance of your major field to your career goals	___	___	___	___	___	___
(23)	Information given to you about this school before enrolling	___	___	___	___	___	___
(24)	Quality of students	___	___	___	___	___	___
(25)	The school in general	___	___	___	___	___	___

24. Please select from the list above three factors which, if changed for the better, would have most encouraged you to stay at (INSTITUTION). (LIST IN ORDER OF IMPORTANCE)

1. _____ 2. _____ 3. _____

25. What are you currently doing? (CHECK ALL THAT APPLY) (✓)

___(1) Attending or plan to attend school soon _____
Name of Institution
___(2) Entered or plan to enter military service
___(3) Looking for a job
___(4) Working in a job
___(5) Caring for home and/or family
___(6) Traveling
___(7) Other, (please specify) _____

Optional Items

1. For community colleges, item 11 might be replaced by:

What program were you enrolled in? (PLEASE CHECK ONE)

_____ (1) Certificate program

_____ (2) A.A. degree program

_____ (3) Neither, only enrolled in selected courses

2. For community colleges, the following two items might be added:

What is the highest degree you currently hold? (PLEASE CHECK ONE)

_____ (1) GED equivalency

_____ (2) High school diploma

_____ (3) Associate degree

_____ (4) Bachelor's degree

_____ (5) Master's degree

_____ (6) Professional degree (includes only dentistry, medicine, optometry, osteopathy, podiatry, veterinary medicine, law, and theology)

_____ (7) Doctor's degree (e.g., Ph.D., Ed.D., D.B.A.)

_____ (8) I have no degree or diploma

Which one of the following was your primary reason for attending school? (PLEASE CHECK ONE)

_____ (1) to complete deficiencies in order to transfer

_____ (2) to prepare for GED

_____ (3) to complete first two years of college in preparation for transferring to a 4-year college

_____ (4) to complete high school

_____ (5) to upgrade my skills

_____ (6) to learn a new skill

_____ (7) for personal enrichment: fun, achievement, etc.

_____ (8) to prepare for a professional examination: real estate, nursing, etc.

_____ (9) Other, please specify _____

3. For item 18, cumulative GPA, an alternative wording that lists categories of GPA rather than having the respondent write in his or her GPA is:

What was your cumulative overall grade point average (GPA) at the time you left school? (PLEASE CHECK ONE)

_____ (1) 1.00 or less

_____ (2) 1.01 - 1.50

_____ (3) 1.51 - 2.00

_____ (4) 2.01 - 2.50

_____ (5) 2.51 - 3.00

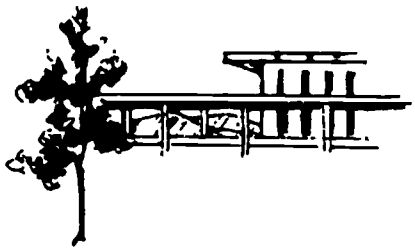
_____ (6) 3.01 - 3.50

_____ (7) 3.51 - 4.00

APPENDIX B

COVER LETTERS

INITIAL COVER LETTER



WINDHAM COLLEGE

PUTNEY, VERMONT 05346

Office of the President

August 1, 1975

Dear Former Student:

Our institutional records indicate that you have not returned to Windham. The College is interested in determining the reasons why you left Windham and your degree of satisfaction with various aspects of the College. This information will be particularly helpful in our institutional planning as we continue to meet the needs of students.

To help us determine this we have enclosed a confidential questionnaire for you to complete. Please complete the questionnaire as soon as possible and return it in the enclosed envelope. You may notice that this questionnaire includes personal data about yourself. This is included in order to verify our institutional records and for statistical purposes. This information will remain confidential and your responses will become part of our statistical report.

If you have re-enrolled at Windham, the receipt of this questionnaire in no way affects that re-enrollment. You were merely selected to receive this questionnaire because you were not continuously enrolled at Windham during one of the preceding years.

Your cooperation and assistance in completing this questionnaire as soon as possible is greatly appreciated. Thank you.

Sincerely,

Harrison M. Symmes
President

HMS/c

TWO VERSIONS OF POSSIBLE FOLLOW-UP COVER LETTERS

(Date)

Dear Former Student:

Recently we mailed you a confidential questionnaire in which we asked you the reasons why you left (INSTITUTION) and your degree of satisfaction with various aspects of the school. We have not yet received your response to this questionnaire.

To help us plan for the institution and the needs of students, it is essential that we receive as many questionnaires as possible.

We are enclosing another questionnaire for you to complete and return to us. If you have already mailed the questionnaire to us, please disregard this second questionnaire. If you have not completed the questionnaire, please take a few moments to do so. Thank you for your assistance.

Sincerely,

Arapahoe
Community College

5900 South Santa Fe Drive
Littleton Colorado 80120
303/794 1550

We know it is easy to put off filling in questionnaires but we need and would appreciate hearing your point of view. Won't you please take a few minutes and complete the enclosed. Thanks, Jib

July 25, 1975

Dear Former Student:

Our institutional records indicate that you did not register continuously for the previous year. The College is interested in determining the reasons why you left A.C.C. and your degree of satisfaction with various aspects of the College. This information will be particularly helpful in our institutional planning as we continue to meet the needs of students.

To help us determine this we have enclosed a confidential questionnaire for you to complete. Please complete the questionnaire as soon as possible and return it in the enclosed envelope. You may notice that this questionnaire includes personal data about yourself. This is included in order to verify our institutional records and for statistical purposes. This information will remain confidential and your responses will become part of our statistical report.

If you have re-enrolled at A.C.C., the receipt of this questionnaire in no way affects that re-enrollment. You were merely selected to receive this questionnaire because you were not continuously enrolled at A.C.C. during the 1974-75 school year.

Your cooperation and assistance in completing this questionnaire as soon as possible is greatly appreciated. Thank you.

Sincerely,

Leahbeth Barnard

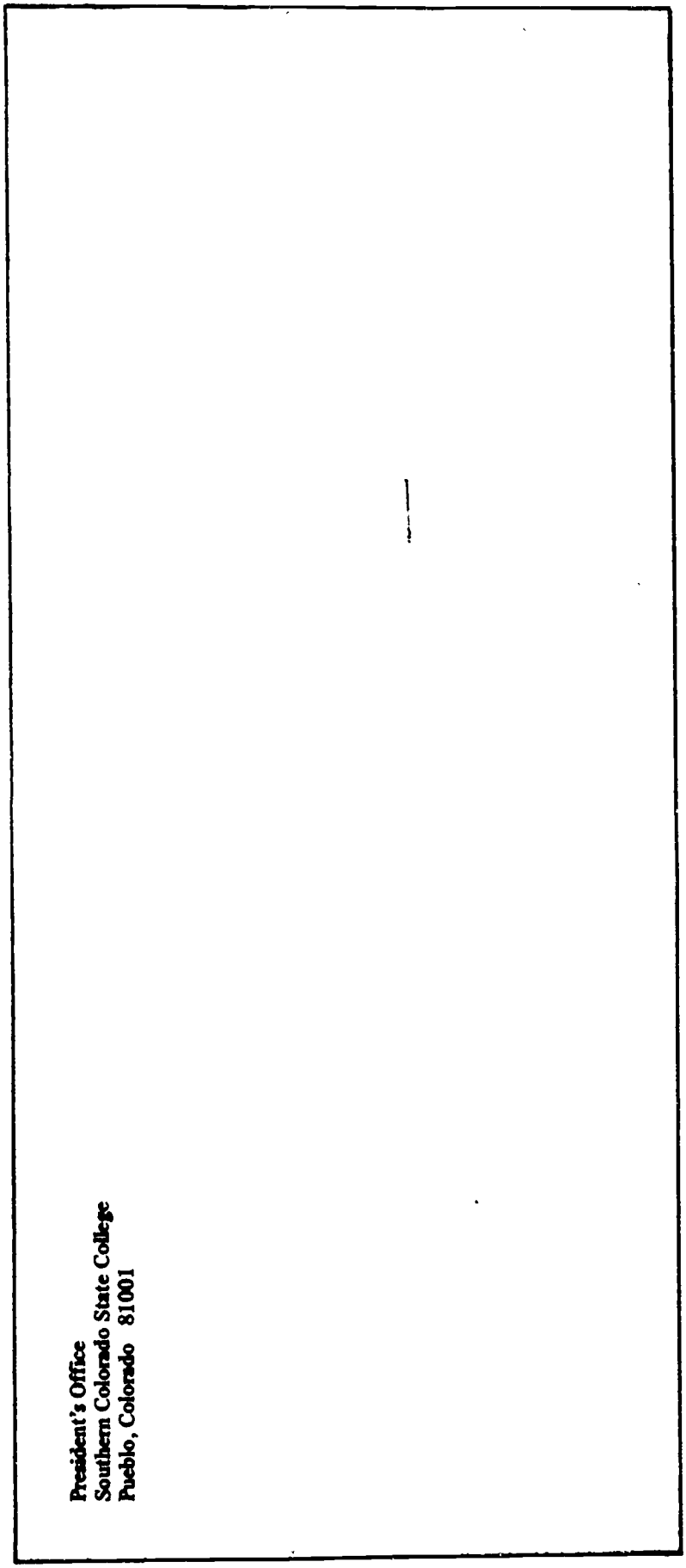
Leahbeth Barnard
Director of Counseling

LB:pk

APPENDIX C

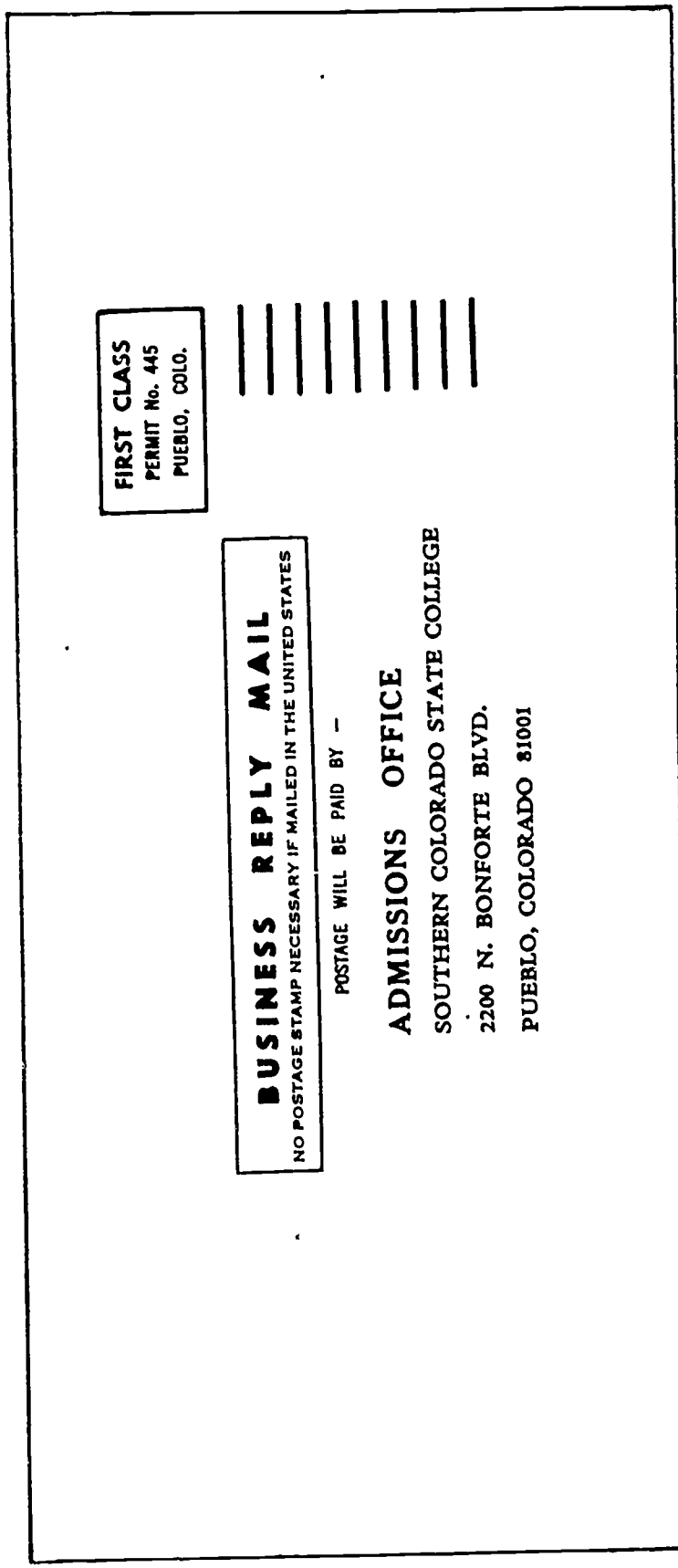
MAILING AND RETURN ENVELOPES

EXAMPLE OF MAILING ENVELOPE



67

EXAMPLE OF RETURN ENVELOPE



APPENDIX D

NCHEMS STUDENT OUTCOMES QUESTIONNAIRE FOR

PROGRAM COMPLETERS: MAJOR FIELD CATEGORIES

LIST OF OCCUPATIONS AND EDUCATIONAL PROGRAMS

If the appropriate program or occupation is not listed, please use the 999 code and write the program or occupation name in the space provided on the questionnaire.

030 AGRICULTURE AND NATURAL RESOURCES
- 031 Agriculture, general
- 032 Natural resources, general
- 033 Agricultural business and economics
- 034 Agricultural and farm management
- 035 Agronomy and horticulture
- 036 Animal, dairy, and poultry science
- 037 Fish, game, and wildlife management
- 038 Food science and technology
- 039 Forestry, natural resource, and range management
- 041 Ornamental horticulture (floristry and nursery science)

060 ARCHITECTURE AND ENVIRONMENTAL DESIGN
- 061 Architecture, general
- 062 Environmental design, general
- 063 Architectural technology
- 064 City, community, and regional planning

090 ASSEMBLY, INSTALLATION, MAINTENANCE, AND REPAIR
- 091 Air conditioning, refrigeration, and heating equipment
- 092 Aircraft and related equipment
- 093 Appliances
- 094 Automotive equipment
- 095 Business machines (including computers and related equipment)
- 096 Diesel equipment
- 097 Electronics equipment (except radio and TV)
- 098 Heavy machinery and equipment
- 099 Radio and TV equipment

120 BIOLOGICAL SCIENCES
- 121 Biology, general
- 122 Botany
- 123 Ecology
- 124 Genetics
- 125 Zoology

150 BUILDING AND CONSTRUCTION TRADES

180 BUSINESS, MANAGEMENT, AND COMMERCE
- 181 Business and commerce, general
- 182 Accounting
- 183 Business management and administration
- 184 Hotel and restaurant management
- 185 Labor and industrial relations
- 186 Marketing and purchasing
- 187 Office management and operations
- 188 Personnel management
- 189 Recreation and tourism
- 191 Sales
- 192 Secretarial studies
- 193 Transportation and public utilities management

210 COMMUNICATIONS
- 211 Communications, general
- 212 Advertising, information services, and public relations
- 213 Journalism (printed media)
- 214 Radio and television

240 COMPUTER AND INFORMATION SCIENCES
- 241 Computer and information sciences, general
- 242 Computer and peripheral equipment operations
- 243 Computer programming
- 244 Data processing
- 245 Information sciences and systems
- 246 Systems analysis

270 EDUCATION
- 271 Education, general
- 272 Counseling and guidance
- 273 Educational administration
- 274 Educational research and development (including curriculum)
- 275 Elementary education (including preschool)
- 276 Secondary education (including junior high)
- 277 Higher and other postsecondary education
- 278 Special education

300 ENGINEERING
- 301 Engineering, general
- 302 Aerospace, aeronautical, and astronautical engineering
- 303 Automotive engineering
- 304 Chemical engineering (includes petroleum refining)
- 305 Civil, construction, and transportation engineering
- 306 Drafting and design
- 307 Electrical, electronics, and communications engineering
- 308 Engineering support technologies
- 309 Environmental and sanitary engineering
- 311 Industrial and management engineering
- 312 Mechanical engineering
- 313 Mining and mineral engineering
- 314 Petroleum engineering (excludes petroleum refining)

330 FINE, APPLIED, AND PERFORMING ARTS
- 331 Art and applied design (e.g., ceramics, painting, sculpture, weaving)
- 332 Art history
- 333 Graphic arts (e.g., engraving, etching, lithography
- 334 Music history, theory, and composition
- 335 Performing arts (e.g., dance, drama, music)
- 336 Photography and cinematography

360 FOREIGN LANGUAGES

390 HEALTH SERVICES
- 391 Health services, general
- 392 Dental or medical assistant services
- 393 Dental or medical laboratory technologies
- 394 Dental hygiene
- 395 Dentistry
- 396 Electrocardiograph and electroencephalograph technologies
- 397 Hospital and health care administration
- 398 Inhalation therapy
- 399 Medical records
- 401 Medicine
- 402 Mortuary science
- 403 Nursing
- 404 Optometry
- 405 Osteopathic medicine
- 406 Pharmacy
- 407 Physical and occupational therapy
- 408 Podiatry
- 409 Public health and sanitation
- 411 Radiologic technologies (e.g., X-ray)
- 412 Speech pathology and audiology
- 413 Veterinary medicine

420 HOME ECONOMICS AND HOMEMAKING
- 421 Home economics and homemaking, general
- 422 Clothing and textiles
- 423 Consumer economics and home management
- 424 Family relations and child development
- 425 Foods and nutrition (including dietetics)
- 426 Home decoration and home equipment

450 INTERDISCIPLINARY STUDIES

480 LAW

510 LETTERS
- 511 Classics
- 512 Comparative literature
- 513 Creative writing
- 514 English, general
- 515 English literature
- 516 Linguistics (includes phonetics, semantics, and philology)
- 517 Philosophy
- 518 Religious studies (excludes theological professions)

540 LIBRARY SCIENCE

570 MACHINE TRADES

600 MATHEMATICS AND STATISTICS

630 MILITARY SCIENCES

660 PERSONAL SERVICES
- 661 Barbering, cosmetology, and related services
- 662 Food and beverage services
- 663 Hotel and lodging services
- 664 Other personal services

690 PHYSICAL SCIENCES
- 691 Physical sciences, general
- 692 Astronomy and astrophysics
- 693 Atmospheric sciences and meteorology
- 694 Chemistry, general
- 695 Earth sciences, general
- 696 Geology
- 697 Metallurgy
- 698 Oceanography
- 699 Physics, general

720 PSYCHOLOGY
- 721 Psychology, general
- 722 Clinical psychology
- 723 Experimental psychology
- 724 Psychometrics

750 PUBLIC AFFAIRS AND SERVICES
- 751 Community services, general
- 752 Fire protection
- 753 Law enforcement and corrections
- 754 Parks and recreation
- 755 Public administration
- 756 Social work and helping services

780 SOCIAL SCIENCES
- 781 Social sciences, general
- 782 Anthropology
- 783 Archaeology
- 784 Area studies
- 785 Economics
- 786 Ethnic studies
- 787 Geography and demography
- 788 History
- 789 International relations
- 791 Political science and government
- 792 Sociology

810 THEOLOGY

998 UNDECIDED

999 OTHER (please write the name of the educational program or occupation in the space provided on the questionnaire)

APPENDIX E

TWO-LETTER OFFICIAL POST OFFICE CODES FOR STATES

TWO-LETTER STATE ABBREVIATIONS

Alabama	AL 01	Montana	MT 29
Alaska	AK 02	Nebraska	NB 30
Arizona	AZ 03	Nevada	NV 31
Arkansas	AR 04	New Hampshire	NH 32
California	CA 05	New Jersey	NJ 33
Canal Zone	CZ 06	New Mexico	NM 34
Colorado	CO 07	New York	NY 35
Connecticut	CT 08	North Carolina	NC 36
Delaware	DE 09	North Dakota	ND 37
District of Columbia	DC 10	Ohio	OH 38
Florida	FL 11	Oklahoma	OK 39
Georgia	GA 12	Oregon	OR 40
Guam	GU 13	Pennsylvania	PA 41
Hawaii	HI 14	Puerto Rico	PR 42
Idaho	ID 15	Rhode Island	RI 43
Illinois	IL 16	South Carolina	SC 44
Indiana	IN 17	South Dakota	SD 45
Iowa	IA 18	Tennessee	TN 46
Kansas	KS 19	Texas	TX 47
Kentucky	KY 20	Utah	UT 48
Louisiana	LA 21	Vermont	VT 49
Maine	ME 22	Virginia	VA 50
Maryland	MD 23	Virgin Islands	VI 51
Massachusetts	MA 24	Washington	WA 52
Michigan	MI 25	West Virginia	WV 53
Minnesota	MN 26	Wisconsin	WI 54
Mississippi	MS 27	Wyoming	WY 55
Missouri	MO 28		

APPENDIX F

QUESTIONNAIRE KEYPUNCHING FORMAT

APPENDIX F

Suggested Keypunching Format for the Questionnaire

Card 1

Columns	Item Number	Description
1-9	3	Student ID number
10		Card Number "1"
11-12	4	Month of birth
13-14	4	Year of birth (last 2 digits)
15	5	Sex
16	6	Civil rights category
17	7	Marital status
18	8	Spouse a student?
19	9	Veteran status
20	11	Degree sought
21	12	Time enrolled
22	13	Months since withdrew
23	14	Student status level
24	15	Full-time vs. part-time status
25	16	Employment status
26	17(1)	No financial aid (1=Y, 2=N)
27	17(2)	Scholarship (1=Y, 2=N)
28	17(3)	Loan (1=Y, 2=N)
29	17(4)	Work study (1=Y, 2=N)
30	17(5)	GI Bill (1=Y, 2=N)
31	17(6)	Other (1=Y, 2=N)
32-34	18	GPA
35	19	Academic probation?
36-38	20	Major field
39	21	Number of changes of major
40	22(1)	Low grades
41	22(2)	Courses too difficult
42	22(3)	Inadequate study habits

(continued)

Columns	Item Number		Description
43	22(4)	REASONS FOR LEAVING	Needed temporary break
44	22(5)		Major not available
45	22(6)		Unsure of major
46	22(7)		Course work not challenging
47	22(8)		Learned what came to learn
48	22(9)		Dissatisfied with major dept.
49	22(10)		Conflict between job and studies
50	22(11)		Accepted a job
51	22(12)		Military service
52	22(13)		Couldn't find a job
53	22(14)		Not enough money
54	22(15)		Couldn't get financial aid
55	22(16)		Financial aid not sufficient
56	22(17)		Child care not available
57	22(18)		School too expensive
58	22(19)		Studying too time-consuming
59	22(20)		Home responsibilites too great
60	22(21)		Illness
61	22(22)		Personal problems
62	22(23)		Personal goals fulfilled
63	22(24)		Changed marital situation
64	22(25)		Moved away

Card 2

Columns	Item Number		Description
1-9	3		Student ID number
10			Card number "2"
11	23(1)	SATISFACTION ITEMS	Counseling/guidance services
12	23(2)		Academic advising services
13	23(3)		Library services
14	23(4)		Employment opportunities
15	23(5)		Financial aid opportunities
16	23(6)		Cost of attending this school
17	23(7)		Enrollment size of this school
18	23(8)		Rules and regulations at this school
19	23(9)		Extra-curricular opportunities
20	23(10)		Intellectual stimulation
21	23(11)		Cultural opportunities
22	23(12)		Social opportunities
23	23(13)		Religious environmnet
24	23(14)		Recreational facilities
25	23(15)		Location of this school
26	23(16)		Residence/living accommodations
27	23(17)		Grading system
28	23(18)		Course content in your major field
29	23(19)		Teaching in your major field
30	23(20)		Amount of contact with your teachers
31	23(21)		Scheduling of classes
32	23(22)		Relevance of your major field to your career goals
33	23(23)		Information given to you about this school before enrolling
34	23(24)		Quality of students
35	23(25)		The school in general

Columns	Item Number	Description
36	24(1)	Reason for staying, 1
37	24(2)	Reason for staying, 2
38	24(3)	Reason for staying, 3
39	25	Current activities
40-41	25	Code for name of institution

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NATIONAL CENTER FOR HIGHER EDUCATION MANAGEMENT SYSTEMS at WICHE

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