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AN EXPERIMENTAL STUDY OF TECHNIQUES TO IMPROVE
RESPONSE RATES OF MAIL QUESTIONNAIRES

by

Eun-hee Shin

A dissertation submitted in partial fulfillment
of the requirement for the degree

of

DOCTOR OF PHILOSOPHY

in

Psychology

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1992

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to my advisor, Dr. Blaine R. Worthen, for his invaluable support and guidance. Without his help, this dissertation could never have been completed. I am grateful not only for his considerable time and effort, invaluable suggestions and guidance, but also for his caring and support as a best friend and mentor.

I want to express my deep appreciation to Drs. Lani Van Dusen, Don Sisson, Mark Innocenti, and Keith Checketts, members of my committee, for all their helpful suggestions for improving this dissertation.

I owe a special debt of gratitude to my good friends for their assistance throughout this survey project in working at such mundane things as typing lists of names, licking stamps, and stuffing envelopes. Without their help, this study could not have been completed.

I am always thankful to my parents in Korea for their everlasting love and support.

Finally, the most special thanks must go to my husband, Sung-il Kim, and my daughter, Yeo-eun, who have been of the greatest support to me all the way to finish my doctoral degree. To Sung-il, I express my heartfelt love and gratitude. I will be forever grateful.

Eun-hee Shin

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ABSTRACT

An Experimental Study of Techniques to Improve
Response Rates of Mail Questionnaire

by

Eun-hee Shin, Doctor of Philosophy
Utah State University, 1992

Major Professor: Dr. Blaine R. Worthen
Department: Psychology

The study examined (a) which single technique (cover letter sponsorship, personalization, anonymity, or appeal) is most effective in increasing response rates with mail questionnaires, and (b) which combination of these selected techniques is most effective in increasing such response rates. Questionnaires concerning faculty evaluation were sent to a national sample of professors.

The present study found that identification of a university as the sponsor of the survey resulted in a significantly higher response rate than that obtained when the survey was sponsored by a private research institute. There was a significant increase in response rates when the cover letter was personalized, as opposed to an unpersonalized form letter. There were no significant differences in response rates attributable to (a) whether respondents were assured anonymity, and (b) the type of

appeal used in the cover letter (personal or professional appeal). No significant interactions were found among any of the four techniques investigated. It was concluded from this study that judicious selection of the survey sponsor and use of cover letter personalization can improve the response rates of a mail questionnaire significantly, at least with the type of population and questionnaire topic used in this study.

(95 pages)

CHAPTER I
INTRODUCTION

Research Problem

Survey research is a very widely used research technique to gather data, and is often the only feasible method of collecting information for a particular study (Isaac & Michael, 1981). The mailed questionnaire is one of the most widely used survey techniques. It is one of the most economical methods of gathering a large amount of data from a large number of people spread over a large geographical area (Dillman, 1978).

However, the most serious problem of the mailed questionnaire is associated with frequently low response rates¹; response rates in the 25% to 50% range are common (Tollefson, Tracy, & Kaiser, 1984; Childers, Pride, & Ferrell, 1980; Hansen, 1980; Hornik, 1982; Jones & Lang, 1980). Nonresponse poses a serious threat to the validity of the conclusions reached through the use of mail surveys, since the validity of the results is dependent on the assumption that there has been no selection bias operating among the respondents.

Considerable research has been conducted on techniques for increasing response rates (e.g., see Linsky, 1975; Fox, Crask, & Kim, 1988). Of the research studies on the mailed questionnaire method, most researchers have investigated the techniques singly; little has been done to see which

combinations of techniques are most effective in increasing response rate (Tedin & Hofstetter, 1982; Worthen & Brezezinski, 1973). Ideally, a large factorial experiment, where factors potentially affecting mailed questionnaire response rates are simultaneously varied, is needed (Heberlein & Baumgartner, 1978).

Various Factors Proposed to Increase Response Rates

Efforts to increase response rates can be classified either by timing (e.g., preliminary notification, concurrent techniques², or follow-up efforts), or by technique (e.g., questionnaire length, survey sponsorship, personalization of letter, provision of return envelope and stamps, assured anonymity, incentives to respond, and so on). Methods classified as techniques can also be considered as "concurrent" on the timing dimension in that they are incorporated in the initial mailing (Kanuk & Berenson, 1975).

It is often the case that the survey researcher (or evaluator) is confronted with budgetary and time constraints (Cox, Anderson, & Fulcher, 1974). Clearly, there would typically be a better possibility of getting a higher response rate if the researcher could have multiple contacts rather than only one contact (Tedin & Hofstetter, 1982). Short time limits often prohibit the use of the preliminary

notification or follow-up mailings. Also, budget limitations often restrict surveys to a single mailing, or prohibits use of known (but costly) techniques for improving response rate. For example, even though a researcher knows the fact that providing monetary incentives and using special delivery mailing can be very effective in increasing the response rate (e.g., see Linsky, 1975; Fox et al., 1988), such techniques may not be possible. These two dimensions--timing and budget restrictions--can be combined into a matrix as shown in Table 1.

Table 1

Budgetary and Time Factors Impacting on Response Rates

Budget Constraints	Timing Factors in Conducting Survey		
	Preliminary Notification	Concurrent Technique	Follow-up Efforts
Seriously Restricted Budget	Cell A	Cell B	Cell C
Less Restricted Budget	Cell D	Cell E	Cell F

Frequently, both time and budget are in short supply to survey researchers. Therefore, Cell B is the situation many survey researchers face. Yet, little is known about what

techniques will best increase response rates in such situations.

Therefore, as Childers et al. (1980) and Rucker, Hughes, Thompson, Harrison, and Vanderlip (1984) have noted, there is a need to develop mail survey techniques that will increase response rates without a substantial increase in survey costs. Also there is a need for additional studies of the factors related to the single mailing of a survey which may affect response rate (Tollefson et al., 1984; Heberlein & Baumgartner, 1978). In this regard, this study is focused on the techniques for increasing response rate when a single mailing and restricted budget (minimum cost) are all that are available (cell B from Table 1). In short, techniques for improving response rates for low-budget, time-bound, "one-shot" surveys must be investigated.

Previous research on several techniques for improving return rates has failed to yield conclusive or useful results.³ Especially, very little research has been conducted on the combination of factors in the previously described situation. A systematic investigation of techniques for improving response rates with minimal cost and a short time line (where only one mailing is possible) could generate badly needed knowledge in this area; the purpose of this study is to generate such knowledge. Specifically, the purpose of this research is to investigate in an experimental study several common techniques used to

increase response rates in mailed questionnaire surveys to determine their relative effectiveness, singly and in combination, in increasing the response rates of mailed questionnaires.

Because the purpose of this study is to test techniques for increasing response rates with low budget surveys, concurrent techniques which depend on monetary incentives are excluded, as are other concurrent techniques that increase costs significantly (e.g., provision of stamped return envelope, and outgoing first class or special delivery postage). The variables most readily manipulated in one-shot, low-budget surveys consist of variations associated with the cover letter. The following variables were selected as potentially important but relatively inexpensive variables available for increasing response rates in one-shot surveys. Specifically, the variables included in this study and levels corresponding to each of the variables are as follows:

1. Sponsorship

- a. university sponsorship
- b. private research institute sponsorship

2. Personalization of cover letter

- a. individually typed salutation using computer
- b. individually handwritten salutation
- c. form letter

3. Anonymity
 - a. assured
 - b. not assured
4. Appeal made in cover letter
 - a. professional appeal
 - b. personal appeal

Objectives

The major objective of this research is to determine which technique or combination of those techniques selected for study is most effective in increasing response rates to mailed questionnaires. To attain this objective, two sub-objectives must be accomplished:

1. To determine which single technique (cover letter sponsorship, personalization, anonymity, or appeal) is most effective in increasing response rates.

2. To determine which combination of these selected techniques is most effective in increasing response rates.

Research Questions

1. Is there a significant difference in response rates depending on whether the questionnaire is sponsored by a university or private research institute?

2. Is there a significant difference in response rates depending on whether the cover letter is personalized or a form letter?

3. Is there a significant difference in response rates depending on whether anonymity is assured?

4. Is there a significant difference in response rates depending on whether the appeal of the cover letter is professional or personal?

5. Is there any interaction among any of the independent variables?

CHAPTER II

REVIEW OF LITERATURE

This section contains a review of the research literature that is relevant to the independent variables investigated in this study--sponsorship, personalization and content(appeal) of the cover letter, and anonymity--and the dependent variable--response rates. Nonempirical opinion statements about techniques for increasing response rates are not included in this literature review. The scope of the literature search was focused on relatively recent studies (mostly those after 1970) because it seems likely that factors associated with responding to questionnaire surveys may well change with changes in societal and cultural morays that occur across time, thus raising questions about the applicability of studies conducted decades ago to current survey research.

These studies are classified into the four categories of independent variables, which are used as organizers in the remainder of this review.

Survey Sponsorship

Many mail survey researchers recommended the use of official support of some kind for the survey, particularly for surveys sent to commercial firms or professional people (Kanuk & Berenson, 1975).

Although the Houston and Nevin study (1977) found no significant difference between return rates for questionnaires sent under cover letter sponsorship of a university and those sent under sponsorship of a commercial firm, university or government sponsorship has generally been found to be superior to private firm sponsorship. For example, Jones and Lang (1980) found significantly higher responses for university sponsorship (28.7%) than for private agency sponsorship (22.4%). Jones and Linda (1978) also found government sponsorship to yield higher response rates (34.7%) than university sponsorship (29%), which in turn was higher than private agency sponsorship (24.7%), although no statistical significance test was provided.

Even though there is little experimental evidence regarding the effects of different types of sponsorship (as shown in Table 2), survey researchers generally recommend use of official university (or government) sponsorship for surveys (e.g., Duncan, 1979; Kanuk & Berenson, 1975). There is a need for additional experimental studies regarding the effect of survey sponsorship on response rates.

Personalization of Cover Letter

Personalization is defined as the process of creating a belief on the part of the respondent that s/he is receiving the researcher's individual attention (Dillman & Frey, 1974). Ways frequently used to accomplish personalization

Table 2

Results of Prior Studies Regarding Sponsorship of Survey

Investigation	Population Surveyed	Survey Variables	Response Rate (%)	Statistical Significance
Houston & Nevin (1977)	Households	University Commercial	42.3 40.4	NS
Jones & Linda (1978)	Home buyers	Private University Government	24.7 29 34.7	No statistical test
Jones & Lang (1980)	Home buyers	University Private	28.7 22.4	P < .01

include individually typed letters, handwritten postscripts, individual salutations, and hand-applied signatures.

In practice, it is frequently assumed that personalization increases response rates (Erdos, 1970; Isaac & Michael, 1981). However, many researchers have questioned the importance of personalization, because achieving personalization is a time-consuming and costly aspect of mail surveys. Also, the issue of personalization raises some concerns regarding "anonymity"--increased personalization implies reduced respondent anonymity (Cox et al., 1974; Andreasen, 1970). (This will be further discussed in the section on anonymity.)

Twelve studies pertaining to personalization are briefly discussed below.

Dillman and Frey (1974) compared one type of cover letter personalization (individually typed letter, with personal salutation and a real signature with blue ink), with a control group (multilithed letters with the multilithed salutation of "Dear Alumni" and with a black preprinted signature). They found that the return rate of the personalized group was nine percentage points greater ($p < .01$) and concluded that cover letter personalization is an important determinate in increasing response rates and their omission would adversely affect response.

Matteson (1974) also investigated the effect of individual typing, personal salutation, and real signatures

on questionnaire response rates. He found that this combination of variables produced a response rate that was higher than a nonpersonalized letter, yielding both statistical and practical significance. The only slightly greater expense involved in the personalized letter Matteson used resulted in an increase in response rate of approximately 10%.

Cox et al. (1974) also found that their personalized cover letter yielded a significantly higher response rate ($p < .005$); unfortunately, they did not specify the exact method of personalization they used.

Carpenter (1975) investigated the importance of personalization, using an experimental design with a control group and three treatments which varied in their degree of personalization. He reported that the responses to the three treatments were in the expected direction, with the most personalized having the highest response.

It appears that there are almost as many studies reporting no advantages to personalization as those reporting an advantage. Worthen and Valcarce (1985), Green and Stager (1986), and Martin and McConnell (1973) found that typing individual cover letters, handsigning the signature, and personalizing the salutation did not produce significantly higher response rates on their mailed surveys. Woodward and McKelvie (1985) and Martin, Duncan, and Sawyer

(1984) also reported that personalization did not significantly affect response rates in their studies.

Kawash and Aleamoni (1971) tried to isolate the effect of one type of personalization by comparing a cover letter with the researcher's personal signature with one with an obviously mimeographed facsimile signature. They found no difference in the initial return rate for the two groups. However, Dodd and Markwiese (1986) also compared the relative effectiveness of hand-signing the signature in blue ink with using photocopied facsimile signatures and found a significantly higher return rate ($p < .05$) with hand-signed cover letters. Anderson and Berdie (1975) compared hand-addressed and typed label-addressed follow-up postcards. They showed that hand-addressed postcards were no more effective in stimulating responses overall than were postcards with typed labels.

In contrast, some researchers (Andreasen, 1970; Rucker et al., 1984) found support for the hypothesis that repeated use (or overuse) of personalized mailings (i.e., using personalization with each mailing in a multi-mailing survey) may have a negative effect on response rate. Rucker et al. (1984) found that pictures of the researcher on the cover letter decreased response. Andreasen (1970) investigated the effect of personalization by comparing three forms of cover letters which varied in their degree of personalization (least--form letter, more--personal

salutation, and most--personal salutation and handwritten postscript), concluding that the more personalized handwritten form of correspondence is somewhat less effective in generating response. He advanced the hypothesis that personalization can act to discourage response, suggesting that when respondents (in his study, New York State lottery winners) desire anonymity, personalization, by implying decreased anonymity, may actually decrease the response rate. He concluded that the benefits of personalization usually do not justify their costs. The result of Houston and Jefferson's (1975) study confirmed Andreasen's conclusions. They found that fewer new car buyers who received personalized letters (thus forming the impression that they were receiving individual attention) responded to their questionnaire than new car buyers who were approached in a nonpersonalized fashion. At present, the research literature on personalization is unclear as to whether or not the strategy of personalizing the cover letter is effective in increasing response rates.

As shown in Table 3, to date there is no conclusive evidence in the literature regarding this issue. Many experts suggest that personalization helps increase response (e.g., Dillman & Frey, 1974; Matteson, 1974), while other studies found no effects of personalization (e.g., Worthen & Valcarce, 1985; Kawash & Aleamoni, 1971).

Table 3

Results of Prior Studies Regarding Personalization of Questionnaire Cover Letter

Investigation	Population Surveyed	Survey Variables	Response Rate (%)	Statistical Significance
Green & Stager (1986)	Teachers	Personal ^a Not personal ^b	20.1 19.9	NS
Dodd & Markwiese(1986)	University employees	Handsigned Photocopied sign	34 20	p < .05
Martin & McConnell(1973)	University students	Personal Not personal	24.2 22.1	NS
Matteson (1974)	Members of an organization ^c	Personal Not personal	31.9 22.0	p < .001
Kawash & Aleamoni(1971)	University faculty	Handsigned Mimeographed	28.52 27.18	NS

(table continues)

Investigation	Population Surveyed	Survey Variables	Response Rate (%)	Statistical Significance
Cox, Anderson, & Fulcher (1974)	Residents ^d	Personal Not personal	21.45 14.05	p < .005
Worthen & Valcarce (1985)	Teachers	Personal Not personal	27.6 22.8	NS
Dillman & Frey (1974)	University alumni	Personal Not personal	92.1 84.8	p < .01
Carpenter (1975)	Households	Least personal (L) More personal (M) Fully personal (F) Control (C)	64.3 66.0 72.2 71.3	L vs. C p < .05 M vs. C NS F vs. C NS
Rucker, Hughes Thompson, Harrison, & Vanderlip (1984)	University alumni	Picture ^e No picture	50 63	p < .02

(table continues)

Investigation	Population Surveyed	Survey Variables	Response Rate (%)	Statistical Significance
Andreasen (1970)	Lottery winners	Least personal More personal Most personal	60.5 56.8 57.8	no significance test
Houston & Jefferson (1975)	New car buyers	Personal Not personal	34.0 49.5	$p < .001$

- ^a Personal= individually typed, personal salutation with individual signature
- ^b Not personal = multi-lithed, "Dear colleague," with obvious duplicated signature
- ^c a national professional organization (no more details were provided)
- ^d Residents of a medium-sized Southwestern city
- ^e Picture = Picture of the researcher was included.

Dillman, Dillman, and Markela (1984) strongly advocate the use of personalization procedures as part of their total design method for mail surveys, suggesting that personalization will either increase response rates or interact with other variables that will. In contrast, Rucker et al. (1984) found support for the hypothesis that repeated use of personalized mailings (i.e., using personalization with each mailing in a multi-mailing survey) may have a negative effect on response rate (Green & Stager, 1986).

Anonymity

Anonymity of an individual asked to respond to a mailed questionnaire survey exists if two conditions are met: (a) the respondent's name is not provided anywhere on the questionnaire, and (b) the respondent is guaranteed anonymity in the cover letter (McDaniel & Rao, 1981). It has generally been assumed that (a) offering safeguards of anonymity encourages a higher level of voluntary response, and (b) where response is mandatory, assurances of anonymity minimize invalid responses. In each case the assumption is made that there are questions which, if answered candidly, would place respondents in a position of fear. For this reason, many cover letters promise respondents anonymity, or at least confidentiality (Kanuk & Berenson, 1975). However, there is little evidence to support these assumptions (see Table 4).

The issue of anonymity is quite complex, since it is closely tied to "personalization," which is designed to increase responses by increasing the respondent's connection (and thus his/her identity) with the survey (Linsky, 1975). Andreasen (1970) and Kanuk and Berenson (1975) concluded from their research concerning personalization of the cover letter that when respondents desire anonymity, personalization may actually decrease response rates to the extent to which respondents feel that their being identified in the cover letter may actually allow the survey sponsor to identify their response, thus compromising their anonymity. Both personalization and anonymity are included in the present study, so the interaction of these factors will be tested.

Anonymity could conceivably have contradictory influences on response rates. Fuller (1973) compared response rates of two groups of navy officers, one of which had names on their questionnaire while the other group had no names affixed and were instructed not to identify their responses. Surprisingly the response rates of those who responded anonymously were significantly lower. Fuller explained that this difference could be due to a heightened feeling of obligation to respond among the officers whose names were affixed. However, as discussed in the previous section on personalization, Houston and Jefferson (1975) found statistically significant higher response rates in

Table 4

Results of Prior Studies Regarding Anonymity Promised to Respondents

Investigation	Population Surveyed	Survey Variables	Response Rate (%)	Statistical Significance
Mason, Dressel, & Bain (1961)	Teachers	Identified ^a Anonymous ^b	82.75 82.70	NS
Fuller (1973)	Navy officers	Identified Anonymous	51 40	$p < .01$
Futrell, & Swan (1977)	Salesmen	Identified Anonymous	72 68	NS
McDaniel, & Rao (1981)	Appliance Buyers	Identified Anonymous	24.1 26.5	NS
Stevens (1974)	University students	Preceded ^c Uncoded ^d	57 59	NS

(table continues)

Investigation	Population Surveyed	Survey Variables	Response Rate (%)	Statistical Significance
Wildman (1977)	Teachers	Identified Anonymous	66 66	NS

^a Identified = Putting their names or ID numbers on the questionnaire.

^b Anonymous = Assuring anonymity.

^c Precoded = No detailed information was given.

^d Uncoded = No detailed information was given.

their nonpersonalized group who received the cover letter that assured respondent anonymity.

On the other hand, a majority of the researchers who have studied this variable have found that assuring anonymity to survey recipients has no significant effect on response rates. McDaniel and Rao (1981) and Futrell and Swan (1977) compared signed and unsigned questionnaires and reported that anonymity had no significant effect on response rates. Mason, Dressel, and Bain (1961) compared the difference in response rates between those receiving forms identified by their name, address, and a code number, and those receiving forms identified by code number only. No significant difference in response rate was found. He suggested that being able to place the respondent's name and address directly on the questionnaire without influencing the response rate greatly facilitated the mailing and processing of the questionnaire. Stevens (1975) and Wildman (1977) investigated the effect of precoding (placing an identifying number) on response rates of questionnaires and found no significant effects. Stevens (1975) also suggested a number of advantages that precoding questionnaires had (including saving time) over hand-coding returned questionnaires.

Since professionals in many fields are expected to respect confidentiality as part of their ethical standards, the respondents may be assuming anonymity and assurance of

it may be superfluous. This may be contributing to the lack of differences in prior research, thus offsetting the effect of anonymity in and of itself. Although beyond the scope of this present study, more factorial studies investigating the effect of anonymity with other possibly interacting variables, like assured confidentiality of nonanonymous responses, sensitivity of topic, and specific respondent characteristics, would help to clarify prior research in this area.

As shown in Table 4, prior research findings are inconclusive in this area. Anonymity apparently can affect response rates differently, depending on the circumstances (Fuller, 1973; Houston & Jefferson, 1975). A majority of researchers in this area have not found that assuring anonymity has any significant effect on response rates (McDaniel & Rao, 1981; Futrell & Swan, 1977; Mason et al., 1961). Erdos (1970) suggested that it is very difficult to make definite conclusions about the wisdom of assuring that responses will be anonymous, because the effect of anonymity seems to change with the subject matter, respondent group, and sponsorship of the survey.

Content (Appeal) of Cover Letter

The cover letter is an integral part of any mail survey. It introduces the respondent to the study and attempts to maximize the respondent's motivation to complete and return the survey questionnaire (Tollefson et al., 1984;

Biner, 1988). Appealing to the potential respondent to complete and return the questionnaire is the major function of the cover letter. The type of appeal can vary, but the content of the appeal can be divided into two general categories. The first category, which is called professional appeal herein, includes any letter which stresses the social utility of the survey by emphasizing the importance and benefit of the research to humankind (Yu & Cooper, 1983). The second category, called personal appeal herein, includes all appeals to the respondent to respond to the survey because their responses will help the researcher --that is, will benefit him or her personally. Such an appeal to help the researcher has been used in cover letters for many mailed questionnaires and has been strongly recommended by some methodology texts (Linsky, 1975).

Champion and Sear (1969) used two different terms, "altruistic" and "egotistic," to describe two different types of appeal in the cover letter. Altruistic appeal is that which emphasizes the direct benefit of the response to the research organization, while egotistic appeal emphasizes the benefits that the respondents would receive. These researchers found a higher response with egotistic than with altruistic appeals.

Childers et al. (1980) found that egotistic and "help the sponsor" appeals did not result in significantly higher response rates than did the control condition, but a cover

letter that appealed to the respondent by stressing the survey's social utility produced a significantly greater response. However, when Tollefson et al. (1984) compared an egotistic appeal, a social utility appeal, and "help the sponsor" appeal, they found that type of appeal had no substantial effect on return rate. Similarly, Jones and Lang (1980) compared egotistic and social utility appeals and found no difference in response rates generated by these two cover letter messages. Martin and McConnell (1973) compared the effectiveness of a cover letter that appealed to the respondent's importance with a routine control group letter and found no significant difference.

Potential respondents' scientific interest in the topic of the questionnaire may be of value to those conducting survey research. In their study, Jones and Linda (1978) found that such scientific interest increased response significantly over an altruistic appeal and slightly over an egotistic appeal. In another study, McKillip and Lockhart (1984) compared three types of appeal: utility appeal (noting that without their input, money might be wasted and the questionnaire would be used to benefit the respondents themselves); value-expression appeal (noting that the questionnaire would be used to benefit students at the university which was one of only a few institutions providing services in the topic area, therefore making the respondent's participation very valuable); and knowledge

appeal (noting the result of the questionnaire would be helping to advance science). They reported that utility appeal proved to be most persuasive in getting individuals to return the questionnaire and value-expression appeal least persuasive. Some researchers report significant effects of specific types of appeal on response rates (Champion & Sear, 1969; Jones & Linda, 1978; McKillip & Lockhart, 1984), while others found that the type of appeal had no substantial effect on return rate (Tollefson et al., 1984; Jones & Lang, 1980; Martin & McConnell, 1973).

Apparently there is no one type of appeal that works equally well with all groups, as shown by studies such as that by Houston and Nevin (1977). They tested the interaction between the two sponsors (university and commercial research firm) and four types of cover letter appeals. No significant differences were found among the various types of cover letter appeal. However, they found a significant sponsor-by-appeal interaction, with "egotistic appeal" working worst when sent under university sponsorship and best under a commercial sponsor. The social utility appeal was best for university-sponsored surveys.

As shown in Table 5, the prior research in this area is unclear. Various types of appeals were investigated in the previous studies, and these could be divided into two general categories--professional and personal appeal. Even though somewhat equivocal, these findings suggest that

professional appeal seems to be more persuasive in the prior research (see Table 5). Further research is necessary to determine if there are generalizable conclusions that can be defended or if the effect of type of appeal is so context-linked and idiosyncratic as to defy all efforts to draw broad conclusions about which type of appeal is most effective.

Table 5

Results of Previous Studies Regarding Appeal of Cover Letter

Investigation	Population	Survey Variables	Prof.* vs Pers.	Response Rate (%)	Statistical Significance
Childers, Pride, & Ferrell (1980)	Academicians	Egotistic (E)	Pers.	39	E vs C : NS
		Help-the-Sponsor(H)	Pers.	38	H vs C : NS
		Social Utility (S)	Prof.	28	S vs C : $p < .05$
		Control (C)		44	
Business practi- tioners		Egotistic (E)	Pers.	31	E vs C : NS
		Help-the-Sponsor(H)	Pers.	34	H vs C : NS
		Social Utility (S)	Prof.	33	S vs C : NS
		Control (C)		31	
Houston & Nevin (1977)	Households --Sponsored by University	Egotistic(E)	Pers.	35.6	No Comparison
		Help-the-Sponsor(H)	Pers.	44.8	
		Social Utility(S)	Prof.	47.2	
		Combined(E, H, S)		41.6	
Households-- Sponsored by Research Firm		Egotistic(E)	Pers.	46.8	No Comparison
		Help-the-Sponsor(H)	Pers.	36.8	
		Social Utility(S)	Prof.	38.8	
		Combined(E, H, S)		39.2	

(table continues)

Investigation	Population	Survey Variables	Prof. ^a vs Pers.	Response Rate (%)	Statistical Significance
Martin & McConnell (1973)	Households	Importance ^a Control	Pers.	14.17 20.83	NS
Tollefson, Tracy, & Kaiser (1984)	Teachers	Egotistic Help-the-Sponsor Social utility	Pers. Pers. Prof.	33 34 33	NS
McKillip & Lockhart (1984)	College students	Utility(U) ^b Value-expression(V) ^c Knowledge(K) ^d	Prof. Pers. Prof.	48.3 39.0 44.0	U vs V : p < .01 V vs K : p < .01

^a The survey variables are categorized by professional(Prof.) and personal(Pers.) appeal, variables that is investigated in this study.

^a Importance = appeal to respondent's importance

^b Utility = noting that without the input of respondent, money might be wasted.

^c Value-expression = noting that questionnaire would be used to benefit students.

^d Knowledge = noting that completing the questionnaire means helping to advance science

CHAPTER III
METHODS AND PROCEDURES

Design of the Study

As was stated in Chapter I, four independent variables were studied in this investigation: survey sponsorship (university sponsorship versus private research institute sponsorship), personalization (personalization by computer versus personalization by handwriting versus no personalization), appeal made in cover letter (professional appeal versus personal appeal), and anonymity (anonymity assured versus no such assurance). The dependent variable was the response rate of mailed questionnaire.

To answer the questions posed in Chapter I, it was necessary to investigate the effects of these four experimental variables singly and in combination, thus requiring a research design that would allow the testing of main effects and interactions. Therefore, the design adopted for this study employed all combinations of all four variables; it was a completely crossed design ($2 \times 3 \times 2 \times 2$ factorial design, see Table 6). Thus, it was possible to analyze the individual main effects of the four variables on response rates as well as to analyze the effects of all possible interactions of the four variables.

Table 6

2 x 3 x 2 x 2 Factorial Experimental Design

Sponsorship	Appeal Made in Cover Letter	Personalization by Computer		Personalization by Handwriting		No Personalization	
		A*	NA**	A	NA	A	NA
University	Professional Appeal	n = 50	n = 50	n = 50	n = 50	n = 50	n = 50
	Personal Appeal	n = 50	n = 50	n = 50	n = 50	n = 50	n = 50
Private Research Institute	Professional Appeal	n = 50	n = 50	n = 50	n = 50	n = 50	n = 50
	Personal Appeal	n = 50	n = 50	n = 50	n = 50	n = 50	n = 50

* Anonymous

** Nonanonymous

Population and Sample

There are numerous populations that could be chosen to test the effectiveness of various techniques for increasing the response rates of mailed questionnaires. For the present study, it was deemed necessary to use a typical population frequently targeted to receive mailed questionnaires. It was also necessary to choose a population which would be experimentally accessible. For both of these reasons, the target population selected for this study was all faculty members in universities and four-year colleges in the United States. The population of college and university teachers was, to a great extent, available through a publication called the National Faculty Directory (Gale Research Co., 1992). The publishers of the directory state their belief that the names listed in the directory represent over 95% of all such faculty members.

Because of the large number of cells in the design and the need to have enough statistical power to draw conclusions about the results at all levels, the research design required that a total of 1,200 persons receive questionnaires (24 cells x 50 person = 1,200 persons), thus 1,500 names were randomly selected from the National Faculty Directory. From these, 50 names were randomly assigned to each cell in the experimental design. The 300 names remaining after this procedure were reserved for use as replacements for any persons in the original sample who

could not be reached by mail. For the purpose of this study, it was deemed necessary that 1,200 persons receive a questionnaire, not just that 1,200 questionnaires be mailed. Therefore, any questionnaires which were returned as undeliverable were sent to new persons, chosen randomly from the 300 extra names.

The Questionnaire and Cover Letter

Development of the questionnaires. This study is concerned mainly with methodological issues. Therefore, the content of the questionnaire has little relevance. However, it was judged as important to have the topic of the questionnaire match in some way with the population. Moreover, it is clear that a wealth of useful data could be gathered as a by-product of the main study. Therefore, since the population consisted of university and college professors, it seemed prudent to choose a topic in higher education that would not only be interesting and timely but also where professors' opinions relating to the topics would be significant.

The topic selected was student evaluation of faculty instruction (often referred to as course evaluation or faculty evaluation). The investigator has both interest and background knowledge in this topic (Shin, 1992). Also the issue of faculty evaluation is a current topic that is generating significant interest recently in higher education (Marsh, 1984).

The questionnaire was developed by the investigator, with input from consultants knowledgeable about survey research and faculty evaluation, and then pilot tested. The actual questionnaire is shown in Appendix A.

Development of the cover letter. Mention has been made in both chapter I and II of the various types of appeal which might be made in cover letters to potential respondents. Appeals might be made to the respondents' scientific interests or to their sense of professionalism to help increase the knowledge in a particular field. These types of appeal were referred to in the present study as professional in nature. Any mention of personal contribution is limited to how it can aid a more grand and generalized cause. Other appeals might be directed specifically at the individual, however. Examples of these are appeals to the respondents' perceptions that they or their responses are important, or to their willingness to help the investigator successfully complete a study. These appeals have been termed personal.

The investigator attempted to assess, in this study, the relative effectiveness of professional and personal appeals in eliciting responses to mailed questionnaires. Therefore, two separate cover letters were developed for inclusion in the mailing, one using a professional appeal and one using a personal appeal. The samples of both cover letters appear in Appendix B.

One other variable was included in the cover letter, that of anonymity. In one version of the cover letter, a paragraph stated that no name would be required on the questionnaire and responses would be completely anonymous. In the other cover letter, a paragraph stated that the respondent's name was on the questionnaire to facilitate checking off incoming responses, but that the confidentiality of the responses would be maintained. Also the subjects in the nonanonymous group received the questionnaire with their names written at the top of the questionnaire.

Combinations of the above variables resulted in four cover letters (professional-anonymous, professional-nonanonymous, personal-anonymous, personal-nonanonymous). It was necessary to manipulate one additional variable, personalization, with one third of the sample receiving duplicated form letters (called "form letters" hereafter), another third receiving personalized letters by computer (called "typed salutation" hereafter), and the remaining third receiving personalized letters with hand-written salutations (called "handwritten salutation" hereafter). The personalized typed salutation letter was produced individually using a computer word processor to type the individual address and salutation. These letters were personally signed in blue ink. The personalized handwritten salutation letter was multilithed, and had no address, but

it did have a "Dear Dr. Smith," which was completed in handwritten blue ink. These letters were also personally signed in blue ink. The form letter was multilithed in a way that revealed it was a form letter and was addressed as "Dear Colleague." These letters had mass-produced facsimile signatures. This increased the number of different types of cover letters to 12.

The types of sponsorship for the survey were also manipulated, with half of the sample receiving university sponsored cover letters (Utah State University), and half receiving letters sponsored by a private research institute (Western Institute for Research and Evaluation). This increased the number of variations in the cover letter to a total of 24. The samples of cover letters are shown in Appendix B.

Data Collection

Cover letters, questionnaires, and outgoing and return envelopes were collated so the appropriate combinations of variables could be mailed to all respondents in the 24 cells. All letters were sent by first-class mail. The response cutoff date was seven weeks after the initial mailing date, by which time responses has slowed to only one or two per week.

Statistical Analysis

Both descriptive and inferential statistics were used in the analyses. The descriptive statistics consisted of the percentage of returned questionnaires accounted for by each of the techniques. The inferential statistics included both chi-square analysis and analysis of variance (ANOVA). Each person in the sample was coded as "1" if s/he returned the questionnaire and as "0" if s/he did not.

Since the experimental data are dichotomous (i.e., returned or not returned), the chi-square analysis is the most appropriate analysis for such data. However, Cochran (1950) has indicated that the sampling distribution of the ANOVA F statistic computed by treating dichotomous data as if measurement were normally distributed is approximately the same as a chi-square distribution when the sample size is reasonably large. In addition, other studies have used ANOVA for dichotomous data (e.g., Hsu & Feldt, 1969), demonstrating that it is robust enough for use in such data, producing results very similar to those produced by non-parametric methods.

In this study, both chi-square and ANOVA analyses were conducted and the results from both analyses were reported and compared.

CHAPTER IV
RESULTS AND DISCUSSION

Four hundred fifty-two out of 1200 questionnaires were completed and returned before the seven-week cutoff date, resulting in an overall response rate of 37.7%. Twenty-five questionnaires which were returned as undeliverable were sent to new subjects who were randomly selected from the three hundred extra names reserved to serve as replacements. The proportion of returned questionnaires for 24 treatment groups is shown in Table 7. Across cells in the 2 x 3 x 2 x 2 design, response rate was found to vary between 26 and 56%. The response rates for the four experimental variables appear in Table 8.

To examine the main effect of the four experimental variables and their interaction effects, both chi-square analyses and ANOVA were conducted. The response rates were cross-tabulated with four experimental variables, and a partitioned chi-square analysis was performed (see Winer, Brown, & Michels, 1991). The results of the chi-square analysis are shown in Table 9. The four-way ANOVA summary table is presented in Table 10. As shown in both tables, both analyses led to nearly identical results. Interestingly, no significant interactions were found among the four experimental variables.

Table 7

Response Rate Percentage for the 24 Treatment Groups

Sponsorship		Personalization by Computer		Personalization by Handwriting		No Personalization	
		A*	NA**	A	NA	A	NA
University	Professional Appeal	42	42	56	36	26	42
	Personal Appeal	40	46	42	54	34	42
Private Research Institute	Professional Appeal	34	36	32	30	28	32
	Personal Appeal	28	42	34	42	26	38

* Anonymous

** Nonanonymous

Table 8

Comparison of the Return Rate for the Four Experimental Variables Under Study

Variable	Number Sent out	Number Returned	Percentage Returned	p value
<u>Sponsorship</u>				
University	600	251	41.8	.003
Private Research Institute	600	201	33.5	
<u>Aronymity</u>				
Anonymous	600	211	35.2	.073
Nonanonymous	600	241	40.2	
<u>Personalization*</u>				
Personalized	800	318	39.8	.035
Not Personalized	400	134	33.5	
<u>Appeal</u>				
Prof. Appeal	600	219	36.5	.403
Personal Appeal	600	233	38.8	
Total	1200	452	37.7	

* To make the comparison of personalization versus no personalization more meaningful, it was necessary to pool the two levels of personalization (i.e., personalization by computer and by handwriting were pooled).

Table 9

Chi-square Analysis Summary Table for Response Rate

Source of Variation	Chi-Square	<u>df</u>	<u>p</u>
Sponsorship (S)	8.873	1	.003
Anonymity (AN)	3.194	1	.073
Personalization (P)*	4.628	2	.098/.035*
Appeal (AP)	.696	1	.404
S x AN	.288	1	.591
S x P	.653	2	.722
S x AP	.005	1	.942
AN x P	1.642	2	.440
AN x AP	2.147	1	.143
P x AP	.230	2	.891
S x AN x P	1.843	2	> .10
S x AN x AP	.058	1	> .10
S x P x AP	.000	2	1.000
AN x P x AP	3.933	2	> .10
S x AN x P x AP	5.250	2	> .10
Total	33.440	23	

* When all three levels of personalization were analyzed, the p value was .098, but when the two levels of personalization (personalization by computer and by handwriting) were pooled, the difference between personalization and no personalization was statistically significant, $\chi^2 = 4.437$, $df = 1$, $p = .035$.

Table 10

ANOVA Summary Table for Response Rate

Source of Variation	SS	df	MS	F	p
Sponsorship(S)	2.083	1	2.083	8.925	.003
Anonymity(AN)	.750	1	.750	3.213	.073
Personalization(P)	1.087	2	.543	2.328	.098
Personalization(pooled) vs. No Personalization*	1.042	1	1.042	4.446	.035
Appeal (AP)	.163	1	.163	.700	.403
S × AN	.053	1	.053	.228	.633
S × P	.347	2	.173	.743	.476
S × AP	.000	1	.000	.000	1.000
AN × P	.500	2	.250	1.071	.343
AN × AP	.607	1	.607	2.722	.095
P × AP	.087	2	.043	.186	.831
S × AN × P	.187	2	.093	.400	.671
S × AN × AP	.003	1	.003	.014	.905
S × P × AP	.060	2	.030	.129	.879
AN × P × AP	.607	2	.303	1.299	.273
S × AN × P × AP	.447	2	.223	.957	.384
Residual	274.520	1176	.223		
Total	281.500	1199	.235		

* When all three levels of personalization were analyzed, the p value was .098, but when the two levels of personalization (personalization by computer and by handwriting) were pooled, the difference between personalization and no personalization was significant, $F(1, 1176) = 4.446$, $p = .035$

The results of the analyses on each variable and a discussion of those results are presented individually in the following sections, one for each variable.

Sponsorship

The chi-square analysis revealed a significant main effect of survey sponsorship on response rate, with $\chi^2 = 8.373$, $df = 1$, $p = .003$. University sponsorship yielded a greater response rate (41.8%) than private research institute sponsorship (37.5%). The ANOVA showed the same result, with $F(1, 1176) = 8.925$, $p = .003$.

These results are consistent with general recommendations of survey researchers (even though there is little previous experimental evidence in this area) to use official university (or government) sponsorship for surveys whenever possible (e.g., Kanuk & Berenson, 1975). Also this finding suggests that university survey researchers may have some advantage in getting people to respond. Universities, as nonprofit institutions, may be perceived as essentially altruistic in their behavior. Respondents may be more likely to help such an organization or to attribute an altruistic motive to their research (Houston & Nevin, 1977). In addition, some researchers have suggested that universities receive more public cooperation because they have been careful to protect anonymity of respondents and have maintained public confidence in university-based

research (Frankel, 1976; Duncan, 1979). Private research institutes may be perceived as being linked more directly to the business sector.

Personalization

As shown in Tables 9 and 10, the initial analyses of all three levels of personalization revealed a non-significant effect on response rate, with $\chi^2 = 4.628$, $df = 2$, $F(2, 1176) = 2.328$, $p = .098$. However, this result is almost certainly due to the fact that there was a negligible difference between the response rate for personalization by computer (39.0%) and that of personalization by handwriting (4.5%). In fact, when the two types of personalization (the personalization by computer and personalization by handwriting) were pooled, the chi-square analysis revealed a significant main effect of personalization on response rate, with $\chi^2 = 4.437$, $df = 1$, $p = .035$, and the ANOVA showed the same result, with $F(1, 1176) = 4.446$, $p = .035$. Thus, when collapsed across types, personalization yielded a significantly greater response rate (39.8%) than no personalization (33.5%) regardless of whether the personalization was done by computer or by handwriting.

This finding supports the widely held belief that personalization of the questionnaire survey cover letter is important and failure to do so could adversely affect the response rate (Dillman & Frey, 1974; Isaac & Michael, 1981).

Personal touches such as personalizing the salutation and handsigning the cover letter may cause respondents to feel that they are receiving individual, personal consideration and attention, resulting in higher response rates.

This study found that there is no difference in the response rates of the two types of personalization (by computer and by handwriting). This suggests that the essential minimum level of appearance of personalization can be achieved without a substantial input of manual labor, while still attaining a higher response rate. Similar suggestions were made by previous researchers (e.g., Carpenter, 1975).

Personalization, as defined and used in this study, costs more in both time and money, but the benefits of its use could seem to more than offset the cost from the standpoint of the number and percentage of returned questionnaires and the resultant quantity of information obtained.

Anonymity

The chi-square analysis revealed that the effect of assuring anonymity on response rates was not statistically significant, although it approached the minimum level of $p < .05$ set by this investigation, with $\chi^2 = 3.194$, $df = 1$, $p = .073$. The ANOVA showed the same result, with

$F(1, 1176) = 3.213, p = .073$. There were no statistically significant differences in response rates between the group that received the cover letter with the assurance of anonymity (35.2%) and the group that received the questionnaire with their name written at the top (40.2%).

Although not statistically significant, the non-anonymous group's response rate was higher than the group for which anonymity was assured. Perhaps placing the respondent's name at the beginning of a mailed questionnaire tends to motivate the respondent or exert some pressure to fill out the questionnaire. This possibility is supported by previous studies (Fuller, 1973; McDaniel & Rao, 1981). Logically, it could seem that this tendency could be stronger whenever respondents may believe they are known to the researcher or are in authoritarian settings (e.g., the military).

The finding of no significant effect due to anonymity is congruent with some, but not all, prior research findings on this variable. As discussed earlier, previous studies found mixed results concerning anonymity, suggesting that it did not have a consistent and clearly defined effect on response rate, but may vary wildly depending on the context. Assurance of anonymity with the population used in this study may be ineffective, because respondents (university or college faculty members) may be familiar with the usual research practices used to guarantee anonymity and

confidentiality in reporting survey results. They may know that ethical standards require researchers to keep individual respondent answers confidential by reporting only group statistics, even if responses were not anonymous. Therefore, in certain populations, such as that used in this study, the assurance of anonymity probably is not necessary.

Appeal

The chi-square analysis revealed that the effect of the two types of cover letter appeal (personal versus professional) on response rate was not significant, with $\chi^2 = .696$, $df = 1$, $p = .404$. Professional appeal yielded nearly the same response rate (36.5%) as personal appeal (38.8%). The ANOVA showed the same result, with $F(1, 1176) = .700$, $p = .403$.

The type of appeal used in a survey cover letter would seem, logically, to provide an opportunity for influencing response rates. However, in this study, using a professional or personal appeal to the survey recipient made no significant difference in response rate, at least with this population. This finding is consistent with some of the previous studies that found that type of appeal had no significant effect on response rate (e.g., Tollefson et al., 1984; Jones & Lang, 1980).

Interactions Among the Independent Variables

Neither the chi-square analysis nor the ANOVA revealed any significant interactive effects among any of the experimental variables (see Table 9 & 10). The effects of the techniques to improve response rates tested in this study were found to be noninteractive.

Finding no interaction effects among any of the independent variables is one of the important results of this study. Thus, four common techniques frequently used in efforts to improve response rates in a survey with minimal cost and a short time line were found in this study to have no interaction effects. Therefore, in the common situation that was investigated in this study (low budget, hurried surveys) each isolated technique found to have a significant effect can be regarded as important in its own right because of the absence of interaction. Given these results, it seems more likely that any of the previous studies that reported a significant effect for any of these techniques singly, becomes more important because the finding would be less likely to be explained by interaction among variables.

There might be significant interactions between these techniques to improve response rates and population characteristics or topic of questionnaire, which are discussed further in a subsequent section dealing with

limitations of this study. However, the four techniques investigated in this study had no interactive effects.

Additional Discussion of Results

This study showed that judicious selection of the survey sponsor and use of cover letter personalization can substantially improve the response rates of a mailed questionnaire. It would be very desirable if one could explain why these particular techniques are effective, based on a solid theoretical foundation. Unfortunately, few efforts have been made to develop a theoretical framework for understanding mail questionnaire responses (McKillip, 1984; Lockhart, 1984; Furse & Stewart, 1984). Of these limited efforts, attempts to apply cognitive dissonance theory have received probably the most attention (Hackler & Bourgette, 1973; Furse & Stewart, 1984). Cognitive dissonance theory, developed by Festinger (1957, 1963, 1964), could be used to explain why particular techniques--in this study, sponsorship and personalization--are effective.

The receipt of a questionnaire and cover letter requesting the recipient's cooperation is an event that prompts a decision of whether or not to respond. Failure to respond may be inconsistent with an individual's self-perception that they are a helpful person, an opinion leader, or at least one who responds to reasonable requests made by others. Cognitive dissonance theory suggests that

in such cases, failure to respond produces a state of dissonance that the individual may seek to reduce by responding to the questionnaire (Furse & Stewart, 1984). The key to generating higher response rates in mail survey may be creating dissonance among those who are initially disinclined to respond. Therefore, sponsorship by a credible and prestigious institution, and use of a personalized cover letter, may influence individuals to respond by generating dissonance when they consider the option of not responding.

CHAPTER V

SUMMARY AND CONCLUSION

This study was designed to answer five research questions. These questions and responses based on the data analysis are summarized briefly below.

1. Is there a difference in response rates depending on whether the questionnaire is sponsored by a university or private research institute?

The results of this study showed that survey sponsorship does influence mail questionnaire response rates. Respondents who received a survey which clearly identified a university as the sponsor responded at a significantly higher rate (41.8%) than respondents who received a cover letter showing that the survey was sponsored by a private research institute (33.5%).

Identification of a university as the sponsor of the survey resulted in a significantly higher response rate than that obtained when the survey was sponsored by a private research institute. The implication of this finding is that those who use mailed questionnaires and who are in a position to choose between sending it out under university or private research institute sponsorship should--all other things being equal--choose university sponsorship.

2. Is there a significant difference in response rates depending on whether the cover letter is personalized or a non-personalized form letter?

There was a significant increase in response rates when the cover letter was personalized. Respondents receiving cover letters with personalized salutations (either handwritten or typed) and hand-applied blue ink signatures were significantly more likely to return questionnaires (39.8%) than respondents who received the form letter with a duplicated "Dear Colleague" salutation and duplicated signature (33.5%). There was almost no difference in response rates between the two ways used to personalize the salutation, either by computer (39.0%) or by hand (40.5%).

The results of this study suggest that the additional time and effort involved in personalizing the cover letter may well be justified by the resulting increases in response rates. The goal of efforts to improve mail questionnaire responses is to increase the viability of the technique for research (Dillman & Frey, 1974). Any technique which increases return rates would decrease nonresponse, thus likely increasing validity through decreasing nonresponse bias. Thus personalization of cover letters may have substantial benefits in making mail surveys a more viable technique for the collection of social science data.

3. Is there a significant difference in response rates depending on whether or not anonymity is assured?

This study found that there were no significant differences in response rates attributable to anonymity. However, contrary to general beliefs, a higher percentage of

the respondents who received the questionnaire with their name written on the form returned it than was true for their counterparts who answered anonymously (although the difference was not significant at the .05 level, but approached significance with $p = .073$).

In this study, assurance of anonymity did not result in a higher response rate. There are a number of obvious advantages in being able to place the respondents' name directly on the questionnaire (Stevens, 1975; Futrell & Swan, 1977). However, if identification of the questionnaire were to reduce the response rate significantly, that may negate those advantages. The evidence produced in this study, however, shows that placing survey recipients' names on the questionnaires does not reduce response rates (indeed, it may even increase response rates) of a mail questionnaire, at least for the population used in this study.

4. Is there a significant difference in response rates whether the appeal of the cover letter is professional or personal?

There were no significant differences found in response rates depending on the types of appeal used in the cover letter. The percentage of responses for those who received the cover letter with professional appeal (an appeal made to the respondents' scientific interest or to their sense of professionalism) was not significantly different in response

rate from that of those who received a cover letter with a personal appeal (an appeal made to the respondents' willingness to help the investigator successfully complete a study).

5. Is there any interaction among any of the independent variables?

The study found no significant interactions among any of the four independent variables of survey sponsorship, cover letter personalization, anonymity, and cover letter appeal. Therefore, in the situation investigated in this study--surveys where budget restriction and short time lines mean only one mailing is possible--each isolated technique that has a significant effect on return rate could be regarded as important in its own right, because its effect does not depend on a combination of variables.

Implications for Practice

Survey researchers or evaluators almost never operate under optimal conditions where they are free of time or budget constraints. This study was especially focused on exploring techniques for improving response rates for low-budget, time-bound, "one-shot" surveys. Therefore, the recommendations based on the results of this study may help researchers or evaluators obtain the highest possible response rates under less than optimal conditions.

If at all possible, a mailed questionnaire survey should be sponsored by a university rather than a private

research institute. The problem of nonrespondent bias, as indicated earlier, is one that can best be reduced or eliminated only by a high response rate. The impact of university sponsorship in increasing response rates has been demonstrated in this and other studies; indeed, it appears to be a useful technique for increasing response rates at least when surveying university professors. Therefore, using university sponsorship rather than private research institute sponsorship, whenever that choice is available to the researcher, is a recommendation that the present study suggests, especially when surveying university personnel.

If time constraints dictate that only "one-shot" mailing is possible, personalization of the cover letter is recommended based on this and other studies. Even though it takes more time and money, it would be worthwhile to make the effort in order to achieve a higher response rate. By means of computer technology, the process of producing personalized salutation on cover letters is less time and money consuming than alternative methods (e.g., handwriting salutations). Personally signing cover letters in blue ink is also recommended, since it is not likely such a signature would be mistakenly thought to be mass duplicated.

Limitations of This Study

The results of this study may be limited by any one or a combination of the following limitations.

First, the results of this study are limited in their applicability and generalizability to respondents like those surveyed in this study. Of course, many of the findings concerning techniques used here may well be generalizable to other similar groups. The techniques used in this study should be tested with other types of populations, however, to see if the results would be replicated with other populations or, as discussed previously, to determine if the techniques used in this study may interact with population characteristics.

Second, this study could not control the relevance, interest or saliency of the topic of the questionnaire to those who receive it. Therefore, the results of this study are generalizable only to studies which use questionnaires similarly relevant to recipients as was true for this study. Unfortunately, beyond simple logic that suggests that "Student Evaluation of Faculty" should be relevant and interesting to faculty, there is no definite measure or index of such relevance or interest in the present study. Until further research is conducted on this issue, it would appear safe only to say that these results seem likely to be generalizable to studies where it is reasonable to assume that the topic of the questionnaire has a reasonable degree of interest for the potential respondents.

Third, the timing of mailing the questionnaires may not have been optimal, because the survey was sent during the

latter part of May, by which time some members of the sample may have been on summer break, or at least approaching it. This could partially explain the rather low overall response rate. If the questionnaires were sent at a different time, when most faculty members were in season, it might affect the overall response rate, and conceivably the independent variables could operate differently under such circumstances, although there would seem to be no immediately apparent, convincing rationale to expect such differences.

Implications for Further Research

This study suggests several fruitful lines of investigation for future research. First, it would be important to replicate this study using different populations, different kinds of questionnaire topics, and different times of the year. This could overcome most of the limitations discussed previously.

Second, this study found no significant difference between the anonymous and nonanonymous group, although the response rate of the nonanonymous group was higher than the anonymous group. It would be useful to determine how generalizable this finding is to persons in other occupational groupings.

Third, as pointed out earlier, the present study found no interaction effects among those techniques to increase response rates. However, these techniques might interact

with the characteristics of populations, or topic of questionnaire. Therefore, other studies testing the interactions of these techniques to increase response rates with population characteristics or questionnaire topic would be very useful.

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FOOTNOTES

1. "Response rate" refers to the percentage of completed questionnaires returned to the survey sponsor.

2. "Concurrent techniques" refer to survey techniques which are used in the initial mailing, as opposed to techniques used as advanced organizers or as follow-up efforts.

3. This research, too voluminous to cite here, is reviewed in Chapter II of this dissertation.

APPENDICES

APPENDIX A
The Mailed Questionnaire

STUDENT EVALUATION OF FACULTY: A SURVEY OF FACULTY OPINIONS

DIRECTIONS: Please answer each of the following questions, as directed.

Validity & Reliability of Student Evaluations

In the following questions(1 through 12), please CIRCLE the one response for each item that best describes your feeling about that item, using the following scale:

SA = Strongly Agree
A = Agree
N = Neutral

D = Disagree
SD = Strongly Disagree

1. Student evaluations do not accurately reflect the quality of my teaching.

SA A N D SD

2. There is rarely agreement between student evaluations and other measures of teaching quality such as administrative reviews, peer observations, etc.

SA A N D SD

3. "Tough" professors who are good teachers will tend to receive lower evaluation ratings and will only be appreciated by students years later.

SA A N D SD

4. Unique class formats (e.g., discussion and laboratory classes) are so different that there is no valid way to use student evaluations to compare them with other courses.

SA A N D SD

5. There is no predictable relationship between student evaluation and student achievement.

SA A N D SD

6. Students are more likely to give slightly higher evaluation ratings to elective courses than to courses taken to fulfill a requirement.

SA A N D SD

7. Students who expect higher course grades tend to give more positive evaluation ratings than students who expect lower course grades.

SA A N D SD

8. Generally, a professor whose course is higher than average in workload and/or difficulty has more chance of getting lower evaluation ratings.

SA A N D SD

9. The content area of a course significantly affects the evaluation ratings.

SA A N D SD

10. Whether a course is lower level undergraduate, upper level undergraduate, or graduate has no significant effect on the evaluation ratings.

SA A N D SD

11. Class size does not have a predictable influence on student evaluation.

SA A N D SD

12. An item such as "Rate this professor compared to others you have had," is a fair evaluation of that professor's teaching performance.

SA A N D SD

Consequences of Student Evaluations

In the following items (13 through 15), please CIRCLE the one response that best describes your situation.

13. How often do you use the results of student evaluation for improvement in your teaching? (Circle one.)

Never Seldom Occasionally Frequently Always

14. How often do administrators of your institution use the results of student evaluations for tenure reviews and promotions? (Circle ONE.)

Never Seldom Occasionally Frequently Always

15. How often do administrators of your institution use the results of student evaluation for annual reviews or salary increase? (Circle ONE.)

Never Seldom Occasionally Frequently Always

Use of Student Evaluation of Faculty/Course

16. How often does your institution evaluate your teaching performance through the use of student evaluations? (Please check ONE.)
- a. Never c. Once per year
 b. Once every 2-5 years d. Every semester/quarter
17. To what extent is student evaluation of courses mandatory at your institution (or department)? (Check ONE.)
- a. All courses are required to be evaluated.
 b. Certain types of courses are required to be evaluated.
 c. Courses taught by instructors of certain rank/role are required to be evaluated.
 d. No courses are required to be evaluated.
18. Which of the following best describes the accessibility of the results of your student evaluations to others? (Check ONE.)
- a. Your administrators have access to students' numerical ratings of you and/or your course.
 b. Others (colleagues and/or students) have access to students' numerical ratings of you and/or your course.
 c. Only you have access to students' numerical ratings of you and/or your course.
 d. Your administrators have access to students' written comments about you and/or your course.
 e. Others (colleagues and/or students) have access to students' written comments about you and/or your course.
 f. Only you have access to students' written comments about you and/or your course.

Faculty Evaluation Criteria

19. Please RANK each of the following in terms of how important you think it is in judging teaching performance? (RANK the most important as 1, the next most important as 2, etc.)
- | | |
|--|---|
| <input type="checkbox"/> a. student evaluation | <input type="checkbox"/> e. classroom observation |
| <input type="checkbox"/> b. peer review | <input type="checkbox"/> f. course syllabi & exams |
| <input type="checkbox"/> c. teacher interview | <input type="checkbox"/> g. student achievement |
| <input type="checkbox"/> d. chairman & dean's evaluation | <input type="checkbox"/> h. self evaluation or report |

20. Please **RANK** each of the following in terms of how important you think it is in judging overall faculty performance? (Rank the most important as 1, the next most important as 2, etc.)
- | | |
|--|---|
| <input type="checkbox"/> a. teaching | <input type="checkbox"/> f. research & publication |
| <input type="checkbox"/> b. student advising | <input type="checkbox"/> g. length of service in rank |
| <input type="checkbox"/> c. campus committee work | <input type="checkbox"/> h. public service |
| <input type="checkbox"/> d. activity in professional societies | <input type="checkbox"/> i. obtaining outside funding (e.g. grants) |
| <input type="checkbox"/> e. personal attributes | |
21. Please **RANK** the importance of each of the following sources of information in evaluating overall faculty performance at your institution, including teaching and other faculty roles? (**RANK** the most important as 1, the next most important as 2, etc.)
- | | |
|--|---|
| <input type="checkbox"/> a. student evaluation | <input type="checkbox"/> f. colleagues' opinion |
| <input type="checkbox"/> b. publication record | <input type="checkbox"/> g. chairperson & dean's evaluation |
| <input type="checkbox"/> c. course syllabi & exams | <input type="checkbox"/> h. self evaluation or report |
| <input type="checkbox"/> d. national colleague's opinions | |
| <input type="checkbox"/> e. record of outside funds received | |

General Demographic Data

Please provide the following descriptive information about yourself:

22. _____
Highest earned degree Year of degree Major
23. _____ 24. _____
Gender Present academic rank
25. _____
If an administrator, title of present position
26. Type of institution where you are currently teaching.
- | | |
|------------------------------------|---|
| <input type="checkbox"/> a. 2 year | <input type="checkbox"/> c. master's degree |
| <input type="checkbox"/> b. 4 year | <input type="checkbox"/> d. doctoral degree |
27. _____
Your current major area of teaching or professional identification. (Use general categories, e.g., "psychology", not "Social Psychology.")
28. _____
Years of higher education teaching experience
29. Do you hold tenure in your present institution? _____

APPENDIX B

The Samples of Cover Letters

* University Sponsorship
* Anonymous

* Personalized-typed
* Professional Appeal



UTAH STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
Logan, Utah 84322-2810
Telephone (801) 750-1460

May 15, 1992

Baker James F.
Dept of Physiology
Childrens Memorial Hospital
Chicago IL 60614

Dear Dr. Baker:

As you know, student evaluation of courses and faculty teaching has become commonplace in American higher education. Students' ratings of teaching performance are regarded as valuable input during the process of tenure, promotion, and other faculty career decisions. However, many university and college faculty members and administrators have expressed reservations about the validity and reliability of students' ratings. In order to extend the knowledge in this important area, our department is conducting a study of professors' views concerning student evaluation of faculty.

You have been selected for this study as part of a nationwide random sample of college and university faculty members. By completing and returning the enclosed questionnaire, you will be contributing to a better understanding of faculty opinions about students' evaluation of faculty instruction. Because using student evaluations to make key career decisions about professors is an increasingly prevalent trend, it is vital to learn how faculty members feel about this trend.

To assure your anonymity, your name is not required on the questionnaire. All responses will be reported by group statistics only.

Please take a few minutes to fill out and return the questionnaire as soon as you can. To help speed your response, many of the questions have been designed to be answered by simple check-marks. We know your time is limited but feel this study will be useful to future understanding and development of high quality higher education programs. We hope you will help in this endeavor.

Please return the questionnaire as soon as possible in the envelope which has been provided for your convenience. Your response will be greatly appreciated.

Sincerely,

Blaine R. Worthen

Blaine R. Worthen
Professor and Chair
Research and Evaluation program

Eun-hee Shin

Eun-hee Shin
Research Associate
Research and Evaluation program

- * University Sponsorship
- * Non-anonymous

- * Personalized-typed
- * Personal Appeal



UTAH STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
Logan, Utah 84322-2810
Telephone (801) 750-1460

May 15, 1992

Battle Constance U.
Dept Child Hlth & Med
George Washington Univ Med School
Washington DC 20037

Dear Dr. Battle:

Our department is helping to conduct a study of students' evaluation of faculty teaching. Specifically, we are studying the views that faculty members at colleges and universities hold about students' evaluation of course instruction. This study is a dissertation project of Eun-hee Shin, a doctoral student in our department, and therefore, your response is very important to the successful completion of that dissertation. We hope you will help, since in order to complete this project satisfactorily, we urgently need your assistance.

You have been selected for this study as part of a nationwide random sample of college and university faculty members. By completing and returning the enclosed questionnaire, you will be contributing to a better understanding of faculty opinions about students' evaluation of faculty instruction. Because using student evaluations to make key career decisions about professors is an increasingly prevalent trend, it is vital to learn how faculty members feel about this trend.

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Sincerely,

Blaine R. Worthen

Blaine R. Worthen
Professor and Chair,
Research and Evaluation program

Eun-hee Shin

Eun-hee Shin
Ph. D Candidate
Research and Evaluation Program

- * University Sponsorship
- * Non-anonymous

- * Personalized-handwritten
- * Professional Appeal



UTAH STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
Logan, Utah 84322-2810
Telephone (801) 750-1460

May 15, 1992

Dear Dr. Fleming :

As you know, student evaluation of courses and faculty teaching has become commonplace in American higher education. Students' ratings of teaching performance are regarded as valuable input during the process of tenure, promotion, and other faculty career decisions. However, many university and college faculty members and administrators have expressed reservations about the validity and reliability of students' ratings. In order to extend the knowledge in this important area, our department is conducting a study of professors' views concerning student evaluation of faculty.

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Sincerely,

Blaine R. Worthen

Blaine R. Worthen
Professor and Chair,
Research and Evaluation program

Eun-hee Shin

Eun-hee Shin
Research Associate,
Research and Evaluation Program

- * University Sponsorship
- * Anonymous

- * Personalized-handwritten
- * Personal Appeal



UTAH STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
Logan, Utah 84322-2810
Telephone (801) 750-1460

May 15, 1992

Dear *Dr. Friedman*:

Our department is helping to conduct a study of students' evaluation of faculty teaching. Specifically, we are studying the views that faculty members at colleges and universities hold about students' evaluation of course instruction. This study is a dissertation project of Eun-hee Shin, a doctoral student in our department, and therefore, your response is very important to the successful completion of that dissertation. We hope you will help, since in order to complete this project satisfactorily, we urgently need your assistance.

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Sincerely,

Blaine R. Worthen

Blaine R. Worthen
Professor and Chair,
Research and Evaluation program

Eun-hee Shin

Eun-hee Shin
Ph.D. Candidate,
Research and Evaluation Program

- * University Sponsorship
- * Non-anonymous

- * Form letter
- * Professional Appeal



UTAH STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
Logan, Utah 84322-2810
Telephone (801) 750-1460

May 15, 1992

Dear Colleague:

As you know, student evaluation of courses and faculty teaching has become commonplace in American higher education. Students' ratings of teaching performance are regarded as valuable input during the process of tenure, promotion, and other faculty career decisions. However, many university and college faculty members and administrators have expressed reservations about the validity and reliability of students' ratings. In order to extend the knowledge in this important area, our department is conducting a study of professors' views concerning student evaluation of faculty.

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Sincerely,

Blaine R. Worthen
Professor and Chair,
Research and Evaluation program

Eun-hee Shin
Research Associate,
Research and Evaluation Program

- * University Sponsorship
- * Non-anonymous

- * Form letter
- * Personal Appeal



UTAH STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY

Logan, Utah 84322-2810

Telephone (801) 750-1460

May 15, 1992

Dear Colleague:

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Sincerely,

Blaine R. Worthen
Professor and Chair,
Research and Evaluation program

Eun-hee Shin
Ph.D. Candidate,
Research and Evaluation Program

- * Private Sponsorship
- * Anonymous

- * Personalized-typed
- * Professional Appeal



Western Institute for Research and Evaluation

1245 N. 1750 East • Logan, UT • 84321 • (801) 752-0001

May 15, 1992

Sennett Herb
Dept of Fine Arts
Palm Beach Atlantic College
West Palm Beach FL 33401

Dear Dr. Sennett:

As you know, student evaluation of courses and faculty teaching has become commonplace in American higher education. Students' ratings of teaching performance are regarded as valuable input during the process of tenure, promotion, and other faculty career decisions. However, many university and college faculty members and administrators have expressed reservations about the validity and reliability of students' ratings. In order to extend the knowledge in this important area, our institute is conducting a study of professors' views concerning student evaluation of faculty.

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Sincerely,

Blaine R. Worthen
Director

Eun-hee Shin
Research Associate

- * Private Sponsorship
- * Non-anonymous

- * Personalized-typed
- * Personal Appeal



Western Institute for Research and Evaluation

1245 N. 1750 East • Logan, UT • 84321 • (801) 752-0001

May 15, 1992

Bond Roger C.
Dept of Internal Med
U KS Med Sch Wichita
Wichita KS 67214

Dear Dr. Bond:

Our institute is helping to conduct a study of students' evaluation of faculty teaching. Specifically, we are studying the views that faculty members at colleges and universities hold about students' evaluation of course instruction. This study is a dissertation project of Eun-hee Shin, a doctoral student in Utah State University's psychology department, and therefore, your response is very important to the successful completion of that dissertation. We hope you will help, since in order to complete this project satisfactorily, we urgently need your assistance.

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Sincerely,

Blaine R. Worthen
Director

Eun-hee Shin
Research Associate

- * Private Sponsorship
- * Anonymous

- * Personalized-handwritten
- * Professional Appeal



Western Institute for Research and Evaluation

1245 N. 1750 East • Logan, UT • 84321 • (801) 752-0001

May 15, 1992

Dear Dr. Harding:

As you know, student evaluation of courses and faculty teaching has become commonplace in American higher education. Students' ratings of teaching performance are regarded as valuable input during the process of tenure, promotion, and other faculty career decisions. However, many university and college faculty members and administrators have expressed reservations about the validity and reliability of students' ratings. In order to extend the knowledge in this important area, our institute is conducting a study of professors' views concerning student evaluation of faculty.

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Sincerely,

Blaine R. Worthen

Blaine R. Worthen
Director

Eun-hee Shin

Eun-hee Shin
Research Associate

- * Private Sponsorship
- * Non-anonymous

- * Personalized-handwritten
- * Personal Appeal



Western Institute for Research and Evaluation

1245 N. 1750 East • Logan, UT • 84321 • (801) 752-0001

May 15, 1992

Dear Dr. Hsu:

Our institute is helping to conduct a study of students' evaluation of faculty teaching. Specifically, we are studying the views that faculty members at colleges and universities hold about students' evaluation of course instruction. This study is a dissertation project of Eun-hee Shin, a doctoral student in Utah State University's psychology department, and therefore, your response is very important to the successful completion of that dissertation. We hope you will help, since in order to complete this project satisfactorily, we urgently need your assistance.

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Sincerely,

Blaine R. Worthen

Blaine R. Worthen
Director

Eun-hee Shin
Eun-hee Shin
Research Associate

- * Private Sponsorship
- * Non-anonymous

- * Form letter
- * Professional Appeal



Western Institute for Research and Evaluation

1245 N. 1750 East • Logan, UT • 84321 • (801) 752-0001

May 15, 1992

Dear Colleague:

As you know, student evaluation of courses and faculty teaching has become commonplace in American higher education. Students' ratings of teaching performance are regarded as valuable input during the process of tenure, promotion, and other faculty career decisions. However, many university and college faculty members and administrators have expressed reservations about the validity and reliability of students' ratings. In order to extend the knowledge in this important area, our institute is conducting a study of professors' views concerning student evaluation of faculty.

You have been selected for this study as part of a nationwide random sample of college and university faculty members. By completing and returning the enclosed questionnaire, you will be contributing to a better understanding of faculty opinions about students' evaluation of faculty instruction. Because using student evaluations to make key career decisions about professors is an increasingly prevalent trend, it is vital to learn how faculty members feel about this trend.

Your reply will be held in strict confidence and names will never be associated with any published information from this questionnaire. Your name is included on the questionnaire only for purposes of checking off responses and validating each returning questionnaire as a valid response.

Please take a few minutes to fill out and return the questionnaire as soon as you can. To help speed your response, many of the questions have been designed to be answered by simple check-marks. We know your time is limited but feel this study will be useful to future understanding and development of high quality higher education programs. We hope you will help in this endeavor.

Please return the questionnaire as soon as possible in the envelope which has been provided for your convenience. Your response will be greatly appreciated.

Sincerely,

Blaine R. Worthen

Blaine R. Worthen
Director

Eun-hee Shin

Eun-hee Shin
Research Associate

CURRICULUM VITAE

PERSONAL DATA

Name: Eun-hee Shin
 Birthdate: January 28, 1964
 Place of birth: Dague, Korea
 Home Address:
 6100 Vine St. T-125
 Lincoln, NE 68505
 (402) 466-8954

EDUCATION

B.A. (1986)	Ewha Women's University Seoul, Korea
	Major: English Literature
M.S. (1992)	Utah State University
	Major: Psychology
Ph.D. (1992)	Utah State University
	Major: Research and Evaluation Methodology in Psychology

PROFESSIONAL EXPERIENCE

1990-1992	Instructor for Educational Psychology Laboratory at Utah State University
1989-1990 & 1987-1988	Research Assistant of Center for Person with Disabilities at Utah State University

PUBLICATIONS

Manuscripts Currently Submitted for Publication:

Behl, D., Innocenti, M.S., & Shin, E. The relation between mainstreaming experiences and attitudes of parents with typically developing children and parents of children with developmental disabilities. Submitted to Topics in Early Childhood Special Education.

Shin, E., & Worthen, B. Do expected grade, GPA, and class average influence students' evaluation of faculty?
Submitted to Journal of Educational Psychology.

Master's Thesis:

Shin, E. (1992). The relationship between students' evaluation of faculty and students' grades.

Doctoral Dissertation:

Shin, E. (1992). An Experimental study of techniques to improve response rate of mail questionnaire.

Technical Reports:

Fields, T., & Shin, E. (1990). Normative standardization computer managed screening test (FITCH) for speech/language.

Shuster, T.A., Mortensen, L.B., Worthen, B.R., Kim, S., & Shin, E. (1990). Parent opinion concerning Year-Round Education.

PAPERS PRESENTED AT PROFESSIONAL MEETING

Behl, D., Innocenti, M.S., Shin, E. & Bingham, M. (1990a). Attitudes of parents of handicapped and nonhandicapped children toward mainstreaming. Utah Statewide Preschool Conference, Salt Lake City, UT.

Behl, D., Innocenti, M.S., Shin, E. & Bingham, M. (1990b). Attitudes of parents of handicapped and nonhandicapped children toward different intensities of mainstreaming. Council for Exceptional Children, Toronto, Canada.

Kim, S., Van Dusen, L.M., & Shin, E. (1992). When do readers generate elaborations?: Evidence for self-generated elaboration. American Association for the Advancement of Science, Chicago, IL.

Shin, E., & Worthen, B. (1991). Do expected grade, GPA, and class average grade influence students' evaluation of faculty? American Psychological Society, Washington, DC.

Shin, E., Behl, D., & Innocenti, M. (1991). Parent Attitudes toward mainstreaming: The impact of integration at the preschool setting. National Council on Family Relations, Denver, CO.

PROFESSIONAL AFFILIATIONS

American Psychological Society, 1991-1992
National Council on Family Relations, 1991-1992

AWARD

1984 Ewha Women's University scholarship

TEACHING INTERESTS

Educational Psychology
Research Methodology
Evaluation Methodology
Survey Method
Basic and Advanced Statistics
General Psychology

RESEARCH INTERESTS

Faculty Evaluation
Survey Technique
Early Intervention
Human Motivation

REFERENCES

Dr. Blaine R. Worthen
Dept. of Psychology
Utah State University
Logan, UT 84322-2810
(801) 750-1447

Dr. Lani M. Van Dusen
Dept. of Psychology
Utah State University
Logan, UT 84322-2810
(801) 750-1402

Diane Behl
Early Intervention
Research Institute
Utah State University
Logan, UT 84322-6580

Dr. Mark S. Innocenti
Early Intervention
Research Institute
Utah State University
Logan, UT 84322-6580