

Better Formatting For Lower Response Burden

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I. Introduction

Completing a survey is often a novel experience for respondents. In interviewer-administered surveys, a trained interviewer leads respondents through the set of questions. However, in a self-administered mail questionnaire, instructions serve as a compass that helps respondents navigate through a survey. To efficiently guide respondents through the response task, the instructions must be clear and understandable to respondents from a wide variety of backgrounds.

A great deal of research has focused on pretesting questionnaire wording to ensure it is understood by respondents (Presser and Blair, 1994; Fowler, 1992). Less attention has been paid to the layout and formatting of instructions. Much of the work that has been done in this area has produced rather vague guidelines such as, cluttered pages should be avoided (Babbie, 1973, Sanders et al, 1983) or use a lot of white space (Jenkins and Dillman, 1993, 1995; Lagarce and Washburn, 1995). While this is informative on a theoretical level, questionnaire designers are left with little practical guidelines on what constitutes a cluttered page or maximal white space. Attempting to design a questionnaire which meets many of the theoretical criteria can lead to the violation of other guidelines. For example, reducing a question's ambiguity often requires adding words, either to the question itself, or in the form of additional instructions. However, if the question or instructions become too long, respondents may not fully attend to them or ignore them completely. By not reading the questions or instructions carefully respondents may commit errors which could increase the total survey error.

Gower and Dibbs (1989) report that on the 1986 Canadian Census, respondents had a tendency to start answering the questions without reading the initial instructions. This increased undercoverage and jeopardized response rates. They conclude, "The research provided many specific examples of the general principle that respondents usually do not read the instructions and definitions that have been designed to help them (p. 261)."

This paper will report on a practical experience in which several aspects of questionnaire formatting were manipulated to create a form which was less burdensome and more attractive to respondents. First, we describe the methodology used in our study. Next, we report our findings, followed by a discussion of the questionnaire design issues and tradeoffs that are implicit in these findings. The paper concludes with suggestions for future research.

II. Background

The Census Bureau conducts the Schools and Staffing Survey (SASS) for the National Center for Education Statistics. The self-administered Teacher Listing Form (TLF) is the first in the SASS sequence. It is designed to obtain a list of teachers at the school who meet certain criteria. The TLF conducted in 1993 consisted of a set of screening questions followed by a set of instructions for completing the matrix. These instructions were followed by a list of whom to include and whom to omit from the list. For example, itinerant teachers were to be included but student teachers were to be excluded. These two pages of instructions were followed by a matrix in which respondents were asked to list all in-scope teachers who teach at their school. The matrix also asked several questions about work and demographic characteristics of the teachers, including subject matter taught and race/ethnicity. The matrix was repeated for the remainder of the form.

Since the TLF is used to generate a sample of teachers to participate in the subsequent Teacher Survey, error introduced at the TLF stage can affect the quality of the teacher survey data. The Teacher List Validity Study (TLVS) (Waite, 1994) revealed that some respondents erroneously included or excluded teachers on the TLF. Furthermore, in a previous round of cognitive interviews conducted to improve the TLF, Jenkins and Von Thurn (1995) found several other problems with the form that resulted in misreporting. Many respondents perceived the instructions to be burdensome and this negatively affected their desire and ability to complete the task. Jenkins and Von Thurn (1995) further report that information on the TLF was arranged in an illogical manner that proved to be confusing and distracting for respondents, and that many instructions were not well defined. The lack of clear definitions left many respondents wondering if they should list certain teachers, such as speech therapists and librarians.

III. Research Design

Twenty cognitive interviews were conducted in three waves. Revisions to the test TLF instrument were made after the first and second waves.

Interviews were conducted by two experienced researchers from the Census Bureau's Center for Survey Methods Research, using concurrent think aloud and debriefing techniques. Respondents were asked to read and think aloud. Interviewers probed as respondents completed the form. A series of debriefing questions were administered after the respondent completed the survey.

Administrative staff from 7 private and 13 public schools were interviewed. As is often the case in establishment surveys, the person with whom the interview was scheduled was not always the person who completed the entire form. Therefore, multiple respondents were interviewed at the same school in some cases. School size varied widely, ranging from 10 to 142 teachers. Schools were selected from six counties surrounding Washington, DC.

The results reported here are based on a small non-probability sample, using qualitative techniques. Therefore caution should be used in interpreting the results.

IV. Findings

The previous reinterview and cognitive interview studies demonstrated that many of the problems with the original form increased the total survey error (Waite, 1994, Jenkins and Von Thurn, 1995). These results indicated that many aspects of the questionnaire needed to be simplified.

We implemented many of the recommendations generated by previous cognitive research. We rearranged the form so that respondents could navigate through it in a vertical manner. The instructions were numbered to encourage respondents to read them. We used bolding to draw respondents' attention to important terms. We added apple-shaped bullets to draw respondents' attention to the categories under the instruction headings.

The previous TLF was vague in many of its instructions about whom to include or exclude. We provided definitions and examples in the instructions to help reduce the confusion respondents experienced in deciding whether to list some teachers. For example, we added a definition of special education teachers: "Meaning those who are trained to teach the emotionally disturbed, mentally retarded, speech/ language impaired, hearing impaired, visually handicapped, orthopedically impaired, mildly and severely handicapped, and learning disabled." We were confident that the revised form provided respondents with all of the information they would need to complete the form. As a result of adding this information, the instructions for our initial set of cognitive interviews expanded significantly. Appendix A shows the instruction tested in the first round of interviews.

Unfortunately, but perhaps not surprisingly, respondents were overwhelmed by the length of the instruction page. When respondents turned to that page they made comments like, "Holey moley," "Oh god, this is a lot," and "Wow." Other respondents gave nonverbal indications of the burden imposed by the task, such as not reading the instructions or quickly skimming them. This was disconcerting to us. We had carefully crafted the instructions to address coverage problems respondents

raised in the previous cognitive interviews. But, despite our best intentions the obvious fact was we had created a beast more unwieldy than its predecessor.

Not only were the instructions long, but not all of the instructions are applicable to all respondents. For example, a small school with just a couple of general elementary teachers would have to wade through many more lines of irrelevant instructions than the number of teachers they need to list. On the other hand, larger or non-mainstream schools are likely to need the extra instructions. For many respondents the instructions made the task look more difficult than it actually was. Often respondents did not recognize this until after they had completed the task. One respondent said, "Life got better. I thought that's a brutal form. Well it doesn't turn out to be as bad as first glance. But that is a real intimidating form." Clearly there was a need to improve the instruction page so that respondents were not turned off.

We took a three pronged approach to address the problem. First, we reviewed every instruction, looking for places where we could trim even a word or two without compromising the meaning of the instruction. For example the definition of special ed teacher was changed to "Meaning those who teach special education classes to students with disabilities." Next, we focused on formatting the instructions. Our goals were to maximize the benefit of trimming words and use as many visual manipulations as possible to help respondents focus only on the relevant information. The first two headings were combined into one listing that consisted of all the teachers who should be included. The list was indented to increase white space. The headings were changed from black text to blue, to make it easier for respondents to refer to. Subcategories were indented to draw attention to them. Additional bolding was added. Finally, we resorted to gently persuading respondents to read the instructions by removing the first line of the table and replacing it with a large font, bolded reminder to read the instructions before proceeding. Appendix B shows the results of these revisions to the instruction page.

The changes appeared to work better. Although not every respondent read the instructions thoroughly, all at least skimmed them in a more detailed manner than in the first round. Even though many respondents did not read the instructions carefully, most referred back to them when they had a question and were able to find the answer they sought.

V. Instruction Placement

We wanted to place the instructions as close to the response task as possible. To achieve this goal, we tested two different placements of the instructions. The first version had the instructions attached as part of the

form (the “attached” version). The second version of the questionnaire had a loose instruction card inserted into the booklet. The card was printed on a thick card stock with the include / exclude list on front and the instructions on how to complete the table on the reverse side. This format is referred to as the “card” version. We alternated between administering respondents the attached and the card versions of the form. During the debriefing, we asked respondents which instruction format they would prefer. Thirteen respondents preferred the instruction card, while six preferred the instructions to be attached to the booklet. One respondent did not state a preference.

Several respondents were extremely enthusiastic about the loose instruction card. Many of these respondents liked the idea of not having to flip the pages back and forth to refer to the instructions while they were completing the table.

However, many respondents expressed concern over the ease with which a loose card could be lost. In fact, in one of our interviews, the instruction card was misplaced when it was handed back and forth between two respondents.

We hypothesized that the loose instruction card would make the instructions more accessible to respondents when they completed the task and that respondents would refer to them more frequently. We tried to gauge how often respondents referred to the instructions. While we do not have any conclusive evidence one way or the other on this matter, we do know that for both versions, respondents did refer to the instructions.

The matrix of the TLF contains seven columns. Each column asks about a demographic trait or other variable. In an attempt to bring the instructions closer to the task, we placed some instructions on the column headings. We noticed early on that respondents were attending to the heading labels more than to the instructions on the previous page or on the column headings. To take advantage of this we revised the labels to provide as much instruction as possible. However, these labels were still not a substitute for the instructions, especially in some of the more complex columns. For example, the column ‘3 years or less’ was labeled ‘New’ on the original TLF. This was misleading since the definition of ‘New’ was a teacher in their 1st, 2nd, or 3rd year. We renamed the column ‘3 years or less’ to provide a more informative label. However, respondents still need to read beyond the heading to see that they were to include experience at ‘all schools and school districts’.

VI. Discussion

In a self-administered mail survey researchers have little control over what respondents do with the form. Evidence shows that respondents often do not read the

instructions fully or carefully (Gower and Dibbs, 1989). This is especially problematic for a matrix based form like the TLF. Our small qualitative research study clearly showed that respondents were not always reading the instructions. Faced with the alarming prospect early in our interviews, we set out to revise the form with the specific aim of not only improving comprehension, but increasing respondent reading of instructions.

Previous work showed that completing the TLF was burdensome for some respondents, especially because of the quantity of irrelevant information they had to wade through. At the same time, research showed that many respondents needed more instructions and information than the form provided. We were left with the unenviable task of providing all of the information respondents need without overwhelming them with too much information or turning respondents off. We did not succeed entirely, but during the process we gained valuable insight on how respondents handle the form. This information has spurred some ideas for new ways to approach the design of this form.

The first is a concession that we will never get all respondents to read the entire set of directions on whom to include and omit. Our analysis of the cognitive interviews showed that in the best cases, respondents read all or most of the instructions and knew to refer back to them when they had a question. This led us to think about treating the include or omit instructions more as a reference than a set of instructions to be read thoroughly before completing the form. However, it is still important that respondents see the include / exclude list before filling out the table to get a sense of who we want reported and who we do not want reported. If respondents see the task as merely listing the teachers at their school, they may think that the instructions are unnecessary and ignore them altogether. So, we propose a couple of ways to focus respondents on the include / exclude list.

One is to treat the include / exclude list as a reference card. Currently, the list contains teachers who, to our knowledge respondents have not had any uncertainty about whether to include, such as math teachers. Removing them from the list will make the list shorter and a better reference for ‘special cases.’

Another way to focus respondent attention is to further reduce the length of the instruction page. All respondents read the column labels and many skimmed the contents of the column headings on the matrix itself. We realized this early on and adjusted the column labels to be as self-explanatory as possible. We are now considering moving more of the instructions about filling out the column to the matrix. By moving the bulk of the instructions for completing the table onto the actual table we accomplish two goals: 1) we bring the instructions

closer to the task 2) we reduce the amount of instructions on the instruction page. Accomplishing these goals could make respondents more likely to read the include and omit instructions. However, this is also a risky move because it increases the amount of instructions on the form itself. This could result in reduced reading of the instructions. Additionally, to incorporate this added information we will most likely need to increase the size of the survey from an 8 ½ x 11 booklet to an 8 ½ x 14 booklet. The added size of the form may further reduce respondents' desire to cooperate or reduce respondent reading of the column headings.

We found the literature on questionnaire formatting to be vague, containing suggestions like "As a general rule, the questionnaire should be spread out and uncluttered". (Babbie, 1973) Since every survey is unique, it is understandable that others have been vague in their reports. Striking a balance between providing respondents with the necessary information and not overburdening them is not a new problem; however, the literature lacks clear solutions. We manipulated visual elements and saw that this had an influence on how respondents handle a self-administered questionnaire. Even minor adjustments in formatting could lead to improved reading of the instructions. We suggest that further research be conducted that manipulates visual elements. Furthermore, we suggest these manipulations be conducted in a controlled environment, so that individual effects can be detected.

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INSTRUCTIONS

7 Please read the information below, then list and categorize the full-time and part-time teachers at this school in the table on page 5.

8 INCLUDE ON THE LIST

• **Special Education Teachers**

- Meaning those who teach special education classes to the emotionally disturbed, mentally retarded, speech/language impaired, hearing impaired, visually handicapped, orthopedically impaired, mildly and severely handicapped, and learning disabled.

• **General Elementary Teachers**

- Meaning those who teach self-contained classes in grades K-6, i.e., teach the same class of students all or most of the day, unless they teach special education students, in which case see the category above.
- Include kindergarten teachers.

• **Math Teachers**

• **Science Teachers**

• **English / Language Arts Teachers**

• **Social Studies Teachers**

• **Vocational - Technical Education Teachers**

• **Other Subject - Matter Teachers**

- Meaning those who teach art, foreign languages, music, physical education, English as a second language, and any other remaining subjects.
- Include those who teach a remedial reading class or the gifted and talented.

9 ALSO, REMEMBER TO INCLUDE AND CATEGORIZE:

• **Teaching Principals, Teaching Guidance Counselors, Teaching Librarians, Teaching Speech Therapists, Teaching Psychologists, and Teaching School Nurses.**

This includes any staff member who teaches at least one class per week regardless of whether or not it is the same set of students.

For example:

- If a speech therapist teaches a class in remedial reading once a week, include her in the "other" category, but if she teaches an individual child or children who need extra help learning to read, do NOT include her on the form.

• **Teachers of Ungraded Students**

• **Itinerant, Co-op, Traveling, and Satellite Teachers**

- Meaning those who teach at more than one school.

• **Current Long-Term Substitute Teachers**

- Meaning those who are currently filling the role of a regular teacher for 4 or more continuous weeks.

10 OMIT FROM THE LIST

• **Prekindergarten Teachers**

- If they teach ONLY prekindergarten students.

• **Postsecondary and Adult Education Teachers**

- If they teach ONLY postsecondary and adult education students.

• **Short-term Substitute Teachers**

- Meaning those who fill the role of a regular teacher for less than 4 continuous weeks.

• **Student Teachers**

• **Day Care Aides**

• **Teacher Aides**

• **Library teachers who teach only Library Science**

• **Non-teaching principals**

• **Other staff who do not teach any kind of class**

11 COMPLETING THE FORM ON Page 6

• **Column (a) - Name**

- List the names (last name first) of the teachers at your school who meet the criteria specified on the previous page. List each teacher ONLY once.

• **Column (b) - Grade Range**

- Mark (X) to indicate whether the teacher teaches elementary (K-6 grade) or secondary (7-12 grade) students.
- If a teacher teaches both elementary and secondary students at this school, mark (X) the box for the level the teacher teaches the MOST.
- If a teacher teaches two or MORE levels EQUALLY, mark (X) both boxes.
- If a teacher teaches UNGRADED students, mark (X) the box which corresponds to the graded equivalent for children of that age.

• **Column (c) - Subject Matter Taught**

- Mark (X) the box which corresponds to the subject taught MOST by the teacher.
- If the teacher teaches 2 or more subjects EQUALLY, mark (X) all of the boxes that apply.

• **Column (d) - Teacher's Race/Ethnicity**

- Enter the number from the list which corresponds to each teacher's race/ethnicity.

• **Column (e) - Teachers of Students With Limited English Proficiency**

- Mark (X) if applicable.
- Bilingual teachers use native language to varying degrees to instruct students with limited English proficiency.
- English as a second language "ESL" and English for speakers of other languages (ESOL) teachers provide intensive instruction in English to students with limited English proficiency.

NOTE: Foreign language teachers should not be marked unless they teach Bilingual, ESL, or ESOL classes (as defined above).

• **Column (f) - New Teachers**

- Mark (X) if the teacher's total years in the teaching profession at all schools and school districts (not just his or her current school/district) is less than three years prior to the start of this school year.

• **Column (g) - Teaching Status**

- If person is a full-time teacher, enter "1" in the box.
- If person is a part-time teacher, enter "2" in the box.

Include as part-time:

- Itinerant teachers who teach full-time within or outside the school district but part-time in your school.
- Teachers who perform other functions in this school in addition to part-time teaching. For example, a teaching guidance counselor should be counted as a part-time teacher.

• **Column (h) - Title 1**

- If the teacher is a Title 1 (paid in full or part by federal funds under the Elementary and Secondary Education Act) teacher, mark (X) in the column.

INSTRUCTIONS

7 Please read the information below, then list and categorize the full-time and part-time teachers at this school in the table on page 6.

8 **INCLUDE ON THE LIST**

- **Special Education Teachers**
 - Meaning those who teach special education classes to students with disabilities.
- **General Elementary Teachers**
 - Teach self-contained classes in grades K-8, i.e., teach the same class of students all or most of the day, unless they teach special education students, in which case see the category above.
 - Include kindergarten teachers.
- **Math Teachers**
- **Science Teachers**
- **English/Language Arts Teachers**
- **Social Studies Teachers**
- **Vocational/Technical Education Teachers**
 - Teach typing, business, agriculture, home economics as well as any other vocational or technical classes.
- **Other Subject - Matter Teachers**
 - Teach art, foreign languages, music, physical education, English as a Second Language, and any other remaining subjects.
 - Include those who teach gifted and talented or remedial reading classes.
- **Teaching Principals, Teaching Guidance Counselors, Teaching Librarians, Teaching Speech Therapists, Teaching Psychologists, and Teaching School Nurses.**
 - Include any staff members who teach **at least one class per week** regardless of whether or not it is the same set of students.
For example:
 - If a librarian teaches a class in math once a week, include her in the "math" category, but if she only teaches groups of students library skills or how to use the library do NOT include her on the form.
- **Teachers of Ungraded Students**
- **Itinerant, Co-op, Traveling, and Satellite Teachers**
 - Teach at more than one school.
- **Current Long-Term Substitute Teachers**
 - Currently filling the role of a regular teacher for 4 or more continuous weeks.

9 **OMIT FROM THE LIST**

- **Prekindergarten teachers who teach ONLY prekindergarten students.**
- **Adult Education and Postsecondary Teachers**
 - If they teach ONLY adult education or students beyond grade 12.
- **Short-term Substitute Teachers**
 - Fill the role of a regular teacher for less than 4 continuous weeks.
- **Student Teachers**
- **Day Care Aides**
- **Teacher Aides**
- **Library teachers who teach only library skills or how to use the library**
- **Other staff who do not teach any kind of class**

10 **COMPLETING THE FORM ON PAGE 6**

- **Column (a) - Name**
 - List each teacher **ONLY** once.
- **Column (b) - Grade Range**
 - Mark to indicate whether the teacher teaches K-6 grade or 7-12 grade students.
 - If a teacher teaches **both** K-6 and 7-12 students, mark the box for the grade the teacher teaches the **MOST**.
 - If a teacher teaches two or **MORE** grades **EQUALLY**, mark both boxes.
 - If a teacher teaches **UNGRADED** students, mark the boxes which correspond to the graded equivalent for children of that age.
- **Column (c) - Subject Matter Taught**
 - Mark the box which corresponds to the subject taught **MOST** by the teacher.
 - If the teacher teaches 2 or more subjects **EQUALLY**, mark all of the boxes that apply.
- **Column (d) - Teacher's Race/Ethnicity**
 - Enter the number from the list on page 6 which corresponds to each teacher's race/ethnicity.
- **Column (e) - Teachers of Students With Limited English Proficiency**
 - Teaches classes designed for students with limited English proficiency, using approaches such as English as a Second Language (ESL), content ESL, bilingual education, or English for Speakers of Other Languages (ESOL).

NOTE: Foreign language teachers should not be marked unless they teach bilingual, ESL, or ESOL classes (as defined above).
- **Column (f) - 3 Years or less**
 - Teacher in his/her **1st, 2nd, or 3rd** year of teaching at **this or any other school**.
- **Column (g) - Teaching Status**
 - Enter the number from the list to indicate whether the teacher is a full-time or part-time teacher.
Include as part-time:
 - Itinerant teachers who teach full-time in this or other school districts but part-time in your school.
 - Teachers who perform other functions in this school in addition to part-time teaching. For example, a teaching guidance counselor should be counted as a part-time teacher.
- **Column (h) - Title 1**
 - Mark the column if the teacher is a Title 1 teacher (paid in full or part by federal funds under the Elementary and Secondary Education Act).