

TRAINING CENSUS 2000 NONRESPONSE FOLLOW-UP (NRFU) ENUMERATORS¹

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Abstract

During Census 2000, the U.S. Census Bureau hired more than one-half million workers for the Nonresponse Follow-Up (NRFU) operation, a door to door enumeration in which census workers attempt to collect information from households that did not return their census forms. Given an expected national mail response rate of 61%, the overall success of Census 2000 was intricately tied to the success of the NRFU operation. The success of the NRFU operation was, in turn, dependent on the quality of the Census Bureau's training program for the half million new hires who would conduct NRFU. This paper reports the results of an evaluation of the effectiveness of the Census Bureau's NRFU enumerator training program.

1. Background

During the 2000 decennial census, the U.S. Census Bureau recruited and trained approximately one-half million enumerators to work on its Nonresponse Follow-Up (NRFU) operation, a door to door enumeration that required census workers to collect information from households that had not returned their census forms. These new hires were given 14 ¼ hours of classroom training on interviewing skills and census concepts and four hours of on-the-job field training. Once trained, these enumerators were immediately sent out to collect census data from approximately 42,000,000 nonresponding households. To assess the efficacy of the training design and implementation, the Census Bureau conducted an evaluation to determine if the training program prepared the enumerators with the skills to effectively perform the job. Results are presented in this paper.

2. NRFU Enumerator Training

The Nonresponse Follow-Up operation began on April 27, 2000 and was scheduled to run for nine and one-half weeks through July 7. Training was scheduled to take place nationally starting April 24, with replacement training sessions conducted as needed. Upon arriving at

training, each trainee received a trainee kit containing an enumerator's manual, a classroom workbook, several job aids, and a quantity of needed forms and supplies.

The NRFU enumerator manual was the major source of information on the basic responsibilities of the job and the role of the enumerator. The manual was supplemented with several job aids designed to serve as resources to the enumerators while out in the field. These job aids provided step by step instructions on everything from preparing for work to submitting completed work. The trainees also received several "flash cards" to show to respondents during the course of interviewing.

To help ensure uniformity and consistency, the NRFU training program used verbatim lectures and videos. Practice interviews and roleplays were interspersed throughout training. A good portion of the training focused on effective interviewing skills. The training also included a learning module in which trainees went out into the community to do interviews using their "live" cases, and then came back to the classroom to discuss their experiences. At the end of training, the trainees completed a multiple choice test to assess their comprehension.

The NRFU training sessions were usually conducted by a crewleader, preferably one who would later become the trainees' first line supervisor. NRFU crewleaders were also temporary workers, who for the most part had little or no previous census experience. In many cases, the crewleaders, themselves, had been trained on the NRFU operation only a few weeks earlier, and had little or no experience as trainers.

3. Study Design and Methodology

The objective of this study was to examine the quality of the NRFU enumerator training program and the enumerators' preparedness following training. Specific questions to be answered included: (1) were the Census 2000 NRFU trainees able to effectively do the job after completing training, and (2) did the trainees find the training effective and enjoyable.

¹*Disclaimer:* This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone a Census Bureau review more limited in scope than that given to official Census Bureau publications. This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress.

The study used the Kirkpatrick model of training evaluation as a basis for assessing the NRFU training program. The Kirkpatrick model assesses employee training programs on four levels: reaction, learning, application, and organizational performance. Table 1 shows how the Kirkpatrick training evaluation model was implemented for this evaluation. This paper reports results from level 1 (reactions to the training) and level 3 (on-the-job performance).

4. Study Limitations

A major limitation of this research is its heavy reliance on observation data. Despite the use of a very structured observation protocol, the final assessments of the enumerators' on-the-job performance were based on the subjective judgements of individual observers. The reliability and validity of these judgements are highly correlated with the accuracy of the observers' skills as observers, and also, to some extent, on their knowledge of the NRFU operation. These skills varied among the observers, and thus, the study's reliance on observation data may have introduced errors into the results.

Further, the fact that the enumerators who were observed formed an "informal" sample, rather than a predefined, statistically representative sample could affect the generalizability of the study's results. Additionally, although enumerators were told the observations would have no impact on their job, it is likely that they were on their best behavior while being observed, which might impact the overall reliability of the results.²

5. Results

Overall, enumerators were satisfied with the amount and content of the training they received. Study results indicate that the training did prepare the NRFU enumerators to effectively perform their job and carry out the tasks they were trained to do. Nearly all enumerators who were observed conducted NRFU in a competent and efficient manner.

²We told observers to tell enumerators they were being observed as part of an evaluation of NRFU training and results would not be used to evaluate enumerators' performance. We also told enumerators being observed by HQ staff and external contractors that observation results would not be shared with their crewleader or other LCO staff.

5.1 Did the trainees find the training effective and enjoyable?

The results on trainees' reaction to training are based on a post-NRFU telephone survey of a sample of NRFU enumerators. We interviewed about 1194 NRFU enumerators, who had completed an average of 91 NRFU short forms and 28 NRFU long forms. We collected additional data on reactions to the training from post-operation enumerator and crewleader debriefings

The training could be scheduled to take place over three full days or over four to five evenings. About 75% of the trainees attended training during regular business hours; 19% were trained in the evenings; and about 5% participated in weekend training sessions. The enumerators in the survey indicated they received an average of 23 hours³ of training. The majority of enumerators (about 71%) felt the amount of time they spent in training was just right. About 14% of the enumerators thought the training was too short; 15% said it was too long. Most enumerators were satisfied with the training for specific job tasks, with between 46% and 64% indicating they were very satisfied, depending on the task.

Table 2 shows how the NRFU enumerators rated the quality of the training they received on specific NRFU tasks. Most enumerators rated the training satisfactory or better on every facet. The task for which the largest percentage of enumerators felt the training needed improvement (17.2%) was getting respondents to cooperate.

Although the 2000 training program was designed to include a 4-hour field work component, 33% of the NRFU enumerators reported field practice had not been included in their training. Among the 67% of the NRFU enumerators who received field training, about 89% found it useful, with 60% saying very useful. Enumerators who attended a training session that included practice field work were more likely to indicate satisfaction with the guidance and training

³Although the training program was 18 ¼ hours or an average of 6 hours per day over 3 days, we paid travel time to and from the training and enumerators were allowed to charge up to 8 hours per day during the 3 days of training.

The Evaluation Model for Assessing Training Effectiveness (Table 1)

KIRKPATRICK EVALUATION LEVEL	WHAT DO WE WANT TO KNOW?	DATA SOURCE
1 -- REACTION	<i>Did trainees find the training effective, useful, and enjoyable?</i>	<ul style="list-style-type: none"> • enumerator debriefings • post-employment telephone survey • crewleader debriefings
2 -- LEARNING	<i>Did the trainees gain the knowledge intended? Were training objectives met?</i>	<ul style="list-style-type: none"> • classroom training observations • enumeration observations • enumerator debriefings • crewleader debriefings • tests
3 – APPLICATION/ ON THE JOB BEHAVIOR	<i>Can the trainees effectively do the job after completing training?</i>	<ul style="list-style-type: none"> • enumeration observations • enumerator debriefings • crewleader debriefings • employee performance records
4 -- ORGANIZATIONAL PERFORMANCE	<i>What impact has the training had on the agency's overall performance</i>	N/A

received on specific job tasks. Enumerators who had completed practice field work as a part of training were less likely to find specific job tasks difficult. Enumerators whose training included field work also were less likely to find meeting the production and quality goals difficult.

The NRFU enumerators were asked to rate how well trained they were when they started their first interviewing assignment. About 38% of the enumerators reported they felt “very well trained” going out on their first assignment, with only 4% reporting they felt “not very well trained.” Enumerators who had participated in field work as part of their training were more likely to say they felt well trained or very well trained. Those who felt “very well trained” to go out on that first assignment were also more likely to find the job tasks very easy. The job task which the largest percentage of enumerators found “very difficult” (over 27%) was getting respondents to answer all the questions on the long form.

Enumerators were asked if they had gained valuable job skills through the NRFU training and work experience. About 72% of them responded yes, and 90% said they would recommend the job to a friend or relative

5.2 Were the Census 2000 NRFU trainees able to effectively do the job after completing training?

The data on job performance were collected through observational assessments of enumerators. The

observation protocol contained questions which asked the observer to indicate whether the enumerator demonstrated specific skills and knowledge covered in the training.

Observations included in this study took place between April 27, 2000 and June 14, 2000. Observations were conducted in all twelve of the Census regions in varying enumeration environments. Some observers observed only one actual interview while others observed as many as 12 with the same interviewer. A total of 170 enumerators, conducting over 500 NRFU household interviews, was observed.⁴ Observations were made of both short and long form visits. In addition to Census Bureau observers, we hired independent observers with expertise in adult training and/or survey methodology to participate in the observations. Additionally, one of the LCOs in the Seattle region used the observation form when observing its enumerators following training. These data are included in the reported results.

⁴ One hundred forty nine enumerators were observed conducting 1 to 3 interviews. Eighteen enumerators completed 4 to 6 interviews; three enumerators completed more than 6 interviews. Results discussed in this paper are for observations for the 149 enumerators who completed 1 to 3 interviews because of the small number of enumerators observed for 4 or more interviews.

Quality of the Training Received to Help Perform Specific NRFU Tasks (Table 2)

Tasks	Percentage of Enumerators who Rated Training on the Task			
	Outstanding	Good	Satisfactory	Needed Improvement
Determining which household needed follow-up	22.8	42.4	23.3	11.6
Using a map to locate an address	24.8	35.9	22.9	16.3
Determining unit status on census day	26.0	41.2	23.6	9.3
Getting respondents to cooperate	15.6	40.7	26.4	17.2
Completing a form for an occupied unit	33.1	41.3	20.6	5.0
Determining when to take a proxy	16.8	41.1	26.8	15.3
Explaining the purpose of the census	33.7	37.5	20.8	8.0
Filling out your time sheet	42.9	37.3	17.9	1.9
Filling out the long form	26.5	38.3	20.3	15.0

The observation protocol focused on six key skill areas: introductions, reference to Census Day, asking about household relationships, asking about ethnicity, asking about race, and checking coverage. Other skills and knowledge important to the maintenance of data quality were also included on the assessment protocol.

It was critical to the accuracy of the census data that once the enumerator confirmed she/he was at the correct address that she/he determine whether the unit was occupied by the current household, occupied by a different household, vacant or nonexistent on April 1, 2000. If the current household lived at the address on census day, the enumerator was supposed to interview a household member and complete the census questionnaire. The data in Table 3 show that in over 95% of the observed interviews, enumerators did ask the residency question as worded, making sure to emphasize that they were referring to residency as of Census Day.

Enumerators were trained to show the respondent the flashcard which lists various types of relationships and asks for the relationship of each household member to the person listed as "Person 1" on the census form. Table 3 shows that enumerators usually asked the relationship question (about 85% of the time), but only sometimes used the flashcard provided (about 43% of the time).

Training heavily stressed that enumerators ask respondents the Hispanic origin question for every

household member. Enumerators were told they should ask the ethnicity question as worded and show the flashcard which lists various Hispanic/Latino ethnic origins. Scenarios were given in both the practice interviews and the interviewers' skills' video to demonstrate that in a single household, different household members may have different ethnic origins. Training repeatedly emphasized that nothing regarding ethnicity and origin should be assumed.

Table 3 shows that despite the emphasis in training, the ethnicity question was sometimes not read exactly as worded. In about half of the observed interviews, the ethnicity flashcard was not shown. Table 3 indicates the enumerators asked the ethnicity question for every member of the household, though not necessarily as worded, in about 82% of the interviews.

Enumerators also were trained to ask respondents the race question for each person in the household. Trainees were told to show the flashcard which lists the census race categories in conjunction with asking the question. The 2000 Census was the first time that respondents could choose one or more races and the census form was worded to state this. The observation data indicate that enumerators were less likely to correctly follow training procedures when asking about race than any other census procedure. Table 3 results suggest that, despite training, only 69% of the enumerators observed always read the "race" question as worded.

Percentage of Observations Where Skills Were Always Observed (Table 3)

Did the enumerator:	% of Observations Where the Skill was Always Demonstrated			
	Number of Interviews Observed with an Individual Enumerator			
	1-3	3	2	1
introduce self to respondent and show Census Bureau ID?	93.8	89.3	100.0	100.0
confirm that at the correct address?	88.4	81.9	97.0	96.7
provide respondent with copy of Privacy Act Notice, D-31?	82.6	77.1	87.5	93.1
ask question which establishes census day residency, making sure to cite April 1, 2000 as the reference date?	95.7	92.6	100.0	100.0
ask relationship question for each person on the household roster, ensuring to insert the name of person 1 each time the question was asked?	83.3	76.3	91.2	87.9
show Flashcard A (relationship) to respondent when asking relationship question?	43.0	37.1	36.7	62.1
read ethnicity question exactly as worded	76.3	68.4	83.9	87.5
ask ethnicity question for every household member?	81.8	70.3	93.6	96.9
show Flashcard B (ethnicity) to respondent when asking ethnicity question?	49.6	46.7	38.7	69.0
read race question exactly as worded	69.4	58.1	82.8	83.9
read all race categories when asking race question	48.1	37.3	46.4	76.7
show Flashcard C (race)to respondent when asking race question?	47.8	43.4	39.3	66.7
tell respondent s/he could pick more than one race category?	43.6	40.0	29.4	68.4

In addition to assessing how well enumerators followed specific Census procedures at each individual interview, observers were asked to consider **all** of the interviews they observed with an individual enumerator and complete the summary section of the observation assessment form at the end of the day. The results of these general observations are shown in Table 4. The data indicate that most enumerators consistently demonstrated effective interviewing skills and were knowledgeable of census concepts. The observation data indicate, however, that despite training, many enumerators chose not to ask questions exactly as written. Only 60% of the enumerators observed always read the questions exactly as worded.

6. Conclusions and Recommendations

6.1 Conclusions

The Census 2000 NRFU operation required hiring and training one of the largest peacetime workforces in history -- approximately 500,000 people. After 18¼ hours of training, these workers were expected to go out and knock on doors to collect Census data from about

42,000,000 nonresponding households. This paper provides some initial results from an evaluation of the Census 2000 NRFU enumerator training program.

Overall, enumerators were satisfied with the amount and content of the training they received. The best indicator of the effectiveness of employee training programs is the degree to which the skills taught in training are demonstrated on the job. Evaluation results indicate that the training did prepare the NRFU enumerators to effectively perform their job and carry out the tasks they were trained to do.

Nearly all enumerators who were observed conducted NRFU in a competent and efficient manner. Almost all of the enumerators observed displayed their Census ID at each household, properly identified themselves and the purpose of their visit, and determined Census Day residency status. They were slightly less likely to always confirm that they were at the correct address and to provide a Privacy Act Notice. NRFU enumerators were significantly less likely to always read the questions exactly as worded and frequently

Overall Demonstration of General Interviewing Skills (Table 4)

<i>Did the enumerator:</i>	% of Observations with Observers Reporting “YES”
ask all required questions on the form?	87.9
always ask questions exactly as written?	60.1
record responses accurately and legibly?	93.8
probe to clarify unclear responses?	93.2
ever ask leading questions or suggest answers when probing?	28.9
win the cooperation of respondents who initially appeared reluctant to cooperate?	93.9
have difficulty answering any of the respondents questions?	10.6
complete a record of contact each time a residence was visited?	94.2
know how to follow the appropriate skip patterns on the short form?	97.2
know how to follow the appropriate skip patterns on the long form?	91.2
know how to use the census maps to locate addresses needing Follow-Up?	93.4

chose not to use the flashcards provided. The major area where the enumerators seemed less likely to follow closely census procedures was in the area of asking about household members’ race.

6.2 Recommendations

The evaluation results indicate that the Census 2000 NRFU training program was well received by trainees and did produce enumerators who could effectively collect needed Census data. The results also suggest some areas to focus on for improvement in 2010.

- Increase the training time allotted to areas in which enumerators’ feedback indicated they felt less well prepared, with particular emphasis on interacting with reluctant respondents and refusals
- Continue to place emphasis on reading all of the questions exactly as worded, adding additional explanations on why reading questions verbatim is so important to data quality, especially ethnicity and race questions.
- Place additional emphasis and explanation on using flashcards and other job aids.
- Continue to provide opportunity for and enforce field work component of training

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