

**Combating Telephone Fatigue After
Multiple Waves: Testing Prepaid
Incentives and a Hard-Copy
Questionnaire in a Telephone Survey of
Youth With Disabilities and Their Parents**

By:

Anne Kenyon (RTI International), Lynn Newman (SRI International), Suzanne Triplett (RTI), Anne-Marie Knokey (SRI), Kathryn Valdes (SRI), Helen Smith (RTI)

ABSTRACT: The National Longitudinal Transition Study 2 (NLTS2), funded by the U.S. Department of Education, is a nationwide longitudinal study designed to collect information on the education, activities, and development of youth with disabilities. NLTS2 follows approximately 11,000 youth with disabilities and their parents/guardians over a 10-year period as the youth move from high school into their young adult lives; interviews are conducted by telephone every 2 years. The study has faced an increasing challenge to meet response rate goals from wave to wave as participation, particularly from parents, has declined. Researchers have described and tracked the decline in telephone survey response rates and the use of methods to try to stem the decline, such as advance letters and various forms of incentives. Despite using advance letters and incentives, NLTS2 has experienced declining response rates, prompting the study team to test alternative approaches to encourage response. In 2007, we conducted an experiment to test the effectiveness of using a prepaid token incentive (rather than just a post-survey incentive) and a hard-copy questionnaire (as an alternative to the telephone interview). The results showed that parents who were provided with the option of completing a mail survey (along with a prepaid token incentive) were significantly more likely to respond than those who were provided with

only a letter reminding them of the telephone interview (with or without a prepaid token incentive).

BACKGROUND

The National Longitudinal Transition Study-2 (NLTS2), funded by the National Center for Special Education Research at the Institute of Education Sciences, U.S. Department of Education, provides a unique source of information to help in developing an understanding of the experiences of secondary school students with disabilities nationally as they go through their early adult years. NLTS2 is a 10-year study of the characteristics, experiences, and outcomes of a nationally representative sample of youth with disabilities who were 13 to 16 years of age and receiving special education services in grade 7 or above, under the Individuals With Disabilities Education Act (IDEA) in the 2000–01 school year. NLTS2 findings generalize to youth with disabilities nationally and to youth in each of the 12 federal special education disability categories in use for students in the NLTS2 age range. The study is designed to collect data on sample members from multiple sources in five waves, beginning in 2001 and ending in 2009.

Parents/guardians¹ of NLTS2 sample members are important sources of information on youths' school and nonschool experiences, such as disability-related characteristics, services received, household characteristics, and family's level and type of involvement in school. Parents were interviewed by telephone every other year, beginning in 2001 (Wave 1). NLTS2 has faced an increasing challenge to meet response rate goals from wave to wave as

¹ Parents/guardians will be referred to as parents throughout this paper.

participation, particularly from parents, has declined.

Literature Review

Researchers have described and tracked the decline in telephone survey response rates (Singer, Van Hoewyk, & Maher, 2000; Steeh, Kirgis, Cannon, & DeWitt, 2001; DeLeeuw & de Heer, 2002; Curtin, Pressler, & Singer, 2005) and the use of methods to try to stem the decline, such as advance letters and various forms of incentives (Singer 2000; Curtin, et al., 2005). However, our literature review did not yield information about the effectiveness of offering a mail questionnaire option to sample members participating in longitudinal telephone surveys.

Our literature review pointed to several key issues pertinent to NLTS2 and the challenges of stemming the decline in response rates. First, the literature shows that there has been an overall reduction in survey response rates over the last several decades; second, researchers have noted the positive effect of including incentives in advance letters; and finally, there are unique challenges that longitudinal surveys face in general, including increasing nonresponse in subsequent waves.

Curtin et al. (2005) note the steep decline in response rates from 1979 to 1996 on the Random Digital Dial (RDD) Survey of Consumer Attitudes, with an average annual decline of almost three-quarters of a percentage point, from about 72 percent to 60 percent. Since 1996, the authors found that the decline has been steeper, averaging 1.5 percentage points a year. In the 1990s, a monetary incentive was introduced for refusals, which resulted in a slight rise in refusal conversions, but by 2000, the decline resumed. Later, advance letters were used; however, the authors believe that this simply prevented further declines while not

succeeding in raising the rates (Curtin, et al., 2005). Additional research conducted on this same survey data by Singer et al. (2000) found no consistent effect on either the response rate or cooperation rate of promised incentives. Advance letters without an incentive did not appear consistently or substantially to increase the response rate. However, in an experiment where the authors enclosed a \$5 prepayment with the advance letter, there was a significant effect on both response and cooperation rates. The benefits were observed in terms of a reduced number of calls to close out the case and a reduction in the number of interim refusals (Singer, et al., 2000).

In a study identifying factors that influence response in longitudinal surveys, Lepkowski and Couper (2002) cite variation in length of time between waves, number of panel waves, household characteristics, content of the survey, sponsoring organization, data collection organization, and mode of data collection as factors. The authors conclude that repeated interview requests increase the perceived burden and decrease the likelihood of participation and that location information will be more current when the interval between waves is shorter (Lepkowski & Couper, 2002).

In a paper examining the effect of longitudinal burden on survey participation, Apodaca, Lea, and Edwards (1998) noted that longitudinal survey response burden has two components—the first being the length of the initial interview, and the second being the “longitudinal burden,” or the perceived burden of future interviews. In an analysis of responses to both the longitudinal component of the Medicare Current Beneficiary Survey (MCBS) and a one-time supplemental sample of people asked to participate in MCBS, Apodaca et al. analyzed the impact of a statement included in the materials given to the longitudinal sample that noted that participation was for

multiple interviews, versus no such statement for those selected into the one-time supplemental sample. Apodaca et al. found that the effect of the perceived increased burden on survey participation “resulted in a 5 percent decrease in the response rate” (Apodaca, et al., 1998, p. 909).

In a paper reviewing strategies for reducing nonresponse in a longitudinal panel survey, Laurie, Smith, and Lynne (1999) discuss the major sources of attrition in a panel survey: difficulty in locating the respondents, and refusals due to “panel fatigue,” which is the phenomenon of respondents becoming “bored or uninterested in taking part any further or simply feel[ing] that they have ‘done enough’” (Laurie, et al., 1999, p. 270). Laurie et al. conclude that maintaining high response rates requires a “complex mix of procedures and survey systems” (1999, p. 282). These include, but are not limited to, refusal conversion and panel maintenance activities, both of which must be used to limit panel attrition and preserve the sample for future waves.

Unique NLTS2 Challenges

NLTS2 faces additional challenges that likely contribute to the difficulty in obtaining high response rates from parents. These include a high degree of emotion associated with the questions (for parents), the length of the parent interview, and challenges locating a parent of the sampled youth.

The questionnaire topics are very emotional for parents of sampled youth. Youth in the study reflect the full range of federal special education disability categories, including learning disabilities; speech and communication impairments; mental retardation; emotional disturbances; hearing, visual, orthopedic, or other health impairments; autism; traumatic brain injury; multiple disabilities; and deaf/blindness. Qualitative feedback from telephone

interviewers and monitoring has shown that parents of youth with more severe disabilities may become upset when asked questions about their ability to obtain needed services for their youth, particularly as youth age out of the education system and receive fewer services and when the burden of coordinating and providing these same services falls more to the parents. Similarly difficult issues for parents of severely disabled youth to discuss (especially in later waves) include the youth’s post-secondary education, social, and employment experiences. Conversely, parents of youth who may have only minor disabilities or are no longer receiving special education services may become irritated at being asked questions about these topics.

The length of the interview is also a factor, varying from 20 to 40 minutes, depending on whether the youth is able to complete a telephone interview or mail survey by himself or herself (in which case the parent interview is shorter). After several rounds of a lengthy interview, parents know what they are going to be asked and the time commitment the interview entails.

Finally, as in any longitudinal study, locating sample members is critical to achieving high response rates. It is not only difficult to locate and/or contact youth who are transitioning away from home into or out of school or the work environment, but it is also often difficult to locate parents, who may move or remarry over the course of the 10-year study period. Given that the interviews are conducted every 2 years, locating efforts are compounded. That this study does not have access to Social Security Numbers further exacerbates the challenge of locating sample members.

Response Rate Building Measures

Although the first wave of NLTS2 (conducted in 2001) achieved an 82 percent

response rate, as early as the second wave of the study (i.e., the first follow-up with baseline participants, conducted in 2003), response rates among parents began to decline. From the study's inception, the project has sent newsletters and postcards to parents and youth every 6 months between interviews. Sample members also have access to the study website, which publishes information for parents, youth, and educators. During Wave 2, the study team implemented advance letters, refusal conversion letters, intensive tracing efforts to locate parents and youth, and ultimately, a \$20 incentive to refusal cases—all of which contributed to a parent response rate of 70 percent.

With Wave 3, the study team expanded its array of response building measures to not only continue the use of advance and refusal conversion letters and intensive tracing efforts to locate parents and youth but also to offer the \$20 incentive to *all* sample members (parents and youth) rather than just refusals, send postcard and e-mail appeals to pending and refusal cases, mail a photo magnet with a study reminder, and, very late in the data collection period, offer an abbreviated telephone interview to parents as a final effort to obtain information about their youth. The data collection period was also extended by several weeks to allow more time to reach reluctant respondents. The study achieved a parent response rate in Wave 3 of 68.6 percent.

Introducing the Experiment

Given the declining parent response rates observed in Waves 2 and 3, the study team decided to test alternative approaches to encourage response in Wave 4 (conducted in 2007). In addition to implementing the same measures used in Waves 2 and 3, the team conducted an experiment to test the effectiveness of offering parents a prepaid token incentive (rather than just a post-

survey incentive) and a hard-copy questionnaire (as an alternative to the telephone interview).

Our goal was to offer an alternative response method to parents who were not interested or perhaps unable (because of the lack of a telephone number) to respond. While offering a hard-copy questionnaire as an alternative to a telephone interview clearly will not yield the same amount of data, there was precedence for this option on the study because youth who are unable to answer questions by telephone but can accurately respond to a written questionnaire (e.g., youth with hearing impairments) are given this opportunity each wave.

The hard-copy questionnaire developed for this experiment was an abbreviated version of the telephone interview. Due to the complexity of the interview skip logic and length, the instrument was purposely designed to capture critical items, including postsecondary education enrollment, employment, residential independence, marital, and parenting status. Although the questionnaire does not yield as much data as the longer telephone interview, creating an equally complex and lengthy mail questionnaire would not be realistic and would likely result in extremely low response rates.

METHODS

Wave 4 interviews began on April 27, 2007, with a sample of 8,573 parents. The experiment took place from August 29, 2007, through October 15, 2007, 17 weeks after the start of the Wave 4 interviewing period. To evaluate the impact of offering a prepaid token incentive and a hard-copy questionnaire, we created three experimental groups of 200 parents each from the 3,296 parents remaining in the NTLS2 sample at the time of the experiment.

The parents remaining in the NLTS2 sample at the time of the experiment did not differ significantly from those in the initial Wave 4 sample, with one exception: parents in the remaining sample had participated in fewer prior wave interviews than had those in the initial sample. Forty-four percent of parents in the remaining sample, compared with 65 percent of those in the initial sample ($p < .001$) had completed all three of the prior interviews.

Parents were selected into each experimental group in the same proportion from each of the following pending and final status code categories:

- pending nonrefusal cases,
- initial refusals,
- final refusals (not including hostile refusals),
- tracing cases (i.e., needed tracing, in the process of being traced, or deemed “unable to locate”).

The three experimental groups were defined as follows:

- Group 1 comprised 200 cases that were mailed a refusal conversion letter only.
- Group 2 comprised 200 cases that were mailed a refusal conversion letter with a \$5 bill enclosed and the promise of \$20 more if the sample member called to do the telephone interview.
- Group 3 comprised 200 cases that were mailed a refusal conversion letter with a \$5 bill enclosed and a promise of \$15 more if the sample member returned the enclosed hard copy-questionnaire, or \$20 more if he/she called to do the telephone interview.

Parents in the overall experimental group (i.e., all three experimental groups combined) did not differ significantly in their

demographics (youth’s disability category, age, gender, household income, race/ethnicity), number of prior interviews, or experiences with the youth’s schooling when compared with parents in the remaining NLTS2 sample (Table A-1). Parents in each of the three experimental groups also did not significantly differ from each other.

This experiment focused on the following research questions:

→ What is the impact on response rates of a prepaid token incentive and a reminder of the full incentive (Group 2), compared with only a reminder of the full incentive (Group 1)?

→ What is the impact on response rates of including a hard-copy questionnaire, a prepaid token incentive, and a reminder of the full incentive (Group 3) versus a prepaid token incentive and a reminder of the full incentive (Group 2)?

→ What is the impact on response rates of including a hard-copy questionnaire, a prepaid token incentive, and a reminder of the full incentive (Group 3) versus no prepaid incentive, no questionnaire, and just a reminder of the full incentive (Group 1)?

→ To what extent did the respondents differ from nonrespondents?

→ To what extent did the different approaches reach different types of respondents?

These questions were addressed using univariate and bivariate descriptive statistics (e.g., percentages, means, and cross-tabulations). Means and percentages presented are the best estimates of the true means and percentages for the population of interest (e.g., parents of students with similar characteristics to those in these three

groups). However, they are *estimates*, and any given true population mean may fall within a range around the estimate. The width of this range is indicated by the size of the standard error, which is presented for each estimate. The smaller the standard error, the more likely the population mean or percentage lies close to its estimate.² The size of the standard errors is closely related to the number of parents in a given group; groups with very small samples tend to have comparatively large standard errors.

Rather than test for differences between all independent subgroups (e.g., responders in the different experimental groups) simultaneously (e.g., using a $k \times 2$ chi-square test of homogeneity of distribution, where k is the number of experimental groups), the statistical significance of differences between selected pairs of independent subgroups was tested. Specifically, the test statistic used was the F statistic (the square of the Student t statistic). The following formula was used to determine the statistical significance of the differences between independent groups:

$$F = \frac{(P_1 - P_2)^2}{SE_1^2 + SE_2^2}$$

For example, this formula could be used to determine whether the difference in the percentages of parents in experimental Group 1 who report feeling satisfied with the youth’s school and among those in experimental Group 2 is greater than would be expected to occur by chance. In this formula, P_1 and SE_1 are the first percentage and its standard error, and P_2 and SE_2 are the second percentage and its standard error. The squared difference between the two percentages of interest is divided by the sum of the two squared standard errors.

² One can have 95 percent confidence that the true population mean or percentage falls within approximately 2 standard errors above or below the estimate.

If the product of this calculation is larger than 3.84 (i.e., 1.96^2), the difference is significant at the .05 level—that is, it would occur by chance fewer than 5 times in 100. If the result of the calculation is at least 6.63, the significance level is .01; products of 10.8 or greater are significant at the .001 level. Only differences greater than 1.96 pooled standard errors ($F = 3.84$; $p < .05$) are considered statistically significant for this paper.

Statistical tests examining differences between independent subgroups or between responses to different items given by the same group that involve categorical variables with more than two possible response categories were conducted by treating each of the possible response categories as separate dichotomous items.

FINDINGS/RESULTS

Figure 1 presents response rates for each of the three experimental groups. Statistical results are presented in Table 1. Key findings are summarized below.

Figure 1. Percentage responding within 6 weeks of mailing

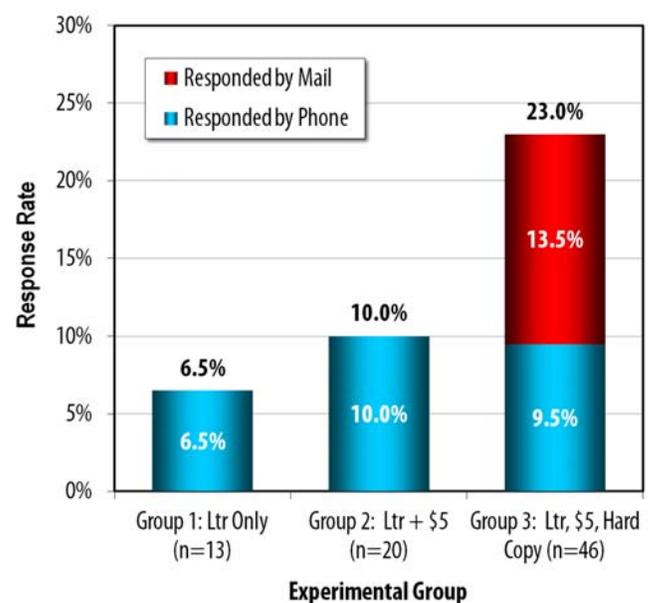


Table 1. Parent response rates, by experimental group

	Percent	Standard error	N	F statistic	p-value
Group 1: Reminder letter only	6.5	2.18	13		
Group 2: Letter, plus enclosed \$5	10.0	2.65	20		
Group 3 : Letter, plus \$5, plus hard-copy questionnaire					
Total	23.0	3.72	46		
Responded by mail	13.5	3.02	27		
Responded by telephone	9.5	2.59	19		
Group 1 vs. Group 2				1.04	NS
Group 1 vs. Group 3				14.64	< .001
Group 2 vs. Group 3				8.10	< .01
Group 3 mail vs. Group 3 telephone				1.10	NS

NOTE: NS = not significant.

Group 3 Response Rate Was the Highest

Parents who were provided with the option of completing a mail survey along with a letter and \$5 (those in Group 3) were significantly more likely to respond to the mailing than were those who only received a letter (Group 1) or a letter with \$5 (Group 2). Within 6 weeks of the mailing, 23 percent of parents in Group 3 had responded, compared with 10 percent in Group 2 ($p < .01$) and 7 percent in Group 1 ($p < .001$). Response rates for Groups 1 and 2 did not differ significantly.

No Difference in Percent Completing the Telephone Interview

Parents in the three experimental groups did not differ significantly in terms of the percentage choosing to complete the telephone interview—7 percent, 10 percent, and 10 percent completed telephone interviews in Groups 1 through 3, respectively. The additional 14 percent of parents in Group 3 who completed a mail survey accounted for the significant differences in the overall response rates between this group and the other two experimental groups.

Mail Survey Option Was as Important as a Larger Incentive

Providing this additional response mode (i.e., a hard-copy questionnaire) appeared to have a similar impact as the size of the overall incentive. Parents in Group 3 were offered \$20 to complete a telephone interview and only \$15 to complete the mail questionnaire; however, 14 percent of Group 3 parents opted to complete the mail questionnaire, compared with 10 percent who chose to complete the telephone interview.

No Significant Differences Between Responders and Nonresponders

Responders and nonresponders in the full experimental sample (the three groups combined) did not differ significantly in their demographics (youth's disability category, age, gender, household income, or race/ethnicity), number of prior interviews, satisfaction with the youth's school or special education services, or in the youth's educational history (e.g., youth had ever been held back a grade, suspended, or expelled). Table 2 presents the results of this

Table 2. Demographics of responders and nonresponders in full experimental sample

	Experimental sample responders	Experimental sample nonresponders
	Percent	
Disability category		
Learning disability	7.7 (4.13)	10.8 (1.83)
Speech impairment	7.7 (4.13)	9.2 (1.71)
Mental retardation	4.6 (3.25)	11.4 (1.88)
Emotional disturbance	16.9 (5.81)	11.0 (1.85)
Hearing impairment	10.8 (4.81)	7.6 (1.57)
Visual impairment	12.3 (5.09)	5.4 (1.34)
Orthopedic impairment	7.7 (4.13)	11.4 (1.88)
Other health impairment	9.2 (4.49)	11.9 (1.92)
Autism	9.2 (4.49)	6.3 (1.44)
Traumatic brain injury	7.7 (4.13)	3.8 (1.13)
Multiple disabilities	6.2 (3.73)	9.9 (1.77)
Deaf/blindness	#	1.4 (0.68)
Age (as of 7/15/2001)		
13 to 14	31.3 (7.24)	31.8 (2.76)
15	26.6 (6.90)	20.9 (2.41)
16	23.4 (6.62)	30.7 (2.73)
17	18.8 (6.10)	16.6 (2.20)
Gender		
Male	66.2 (7.34)	68.8 (2.74)
Female	33.9 (7.34)	31.2 (2.74)
Household income		
\$25,000 or less	34.4 (7.60)	33.3 (2.93)
\$25,001 to \$50,000	32.8 (7.51)	35.5 (2.98)
More than \$50,000	32.8 (7.51)	31.3 (2.89)
Race/ethnicity		
White	66.2 (7.34)	65.7 (2.81)
African American	13.9 (5.36)	20.2 (2.38)
Hispanic	16.9 (5.81)	12.6 (1.96)
Number of prior interviews		
0	5.1 (3.08)	5.0 (1.19)
1	19.0 (5.52)	26.9 (2.43)
2	30.4 (6.47)	31.1 (2.54)
3	45.6 (7.00)	37.0 (2.65)
Youth ever held back a grade	31.7 (7.51)	32.5 (2.83)
Youth ever suspended or expelled	30.0 (7.40)	29.6 (2.74)
Parent ever been through mediation about special education	20.0 (6.46)	14.5 (2.13)
Satisfied with school	77.1 (6.73)	77.2 (2.53)
	<i>N</i>	
	79	521

NOTE: Standard errors are in parentheses.

Rounds to zero.

analysis. We surmise, therefore, that “telephone fatigue” affected all parents universally, regardless of these factors.

No Significant Differences Between Responders to Each of the Three Mailings

Responders to the three types of mailings did not differ significantly in their demographics, satisfaction, or youth’s experiences (see Table 3). This lack of significant differences between respondents to the different approaches might be due in part to the small number of respondents in each of the groups and the large standard errors.

DISCUSSION

Clearly, some parents prefer responding by mail rather than by telephone. When the experimental period was completed, NLTS2 decided to mail questionnaires to all remaining Wave 4 parents who had not yet responded to the telephone interview. This response rate building measure ultimately yielded 387 completed questionnaires from parents (accounting for almost 7 percent of all completed parent interviews).

Our results show that for parents in this study, many of whom are likely tired of

participating in a long telephone interview each wave, a hard-copy questionnaire is a viable option—particularly if the alternative is to lose information about their youth’s experience otherwise. However, more research is needed to understand whether parents who choose to respond to a mail questionnaire are significantly different from those who choose to respond by telephone.

Similarly, more research is needed to understand how those who chose to respond by mail differ from those who were given the option to respond by mail but chose not to respond by any mode. The study team will be exploring these issues using the full set of 387 parents who ultimately responded to the mail questionnaire in Wave 4.

Finally, this experiment did not provide a clear sense of the benefit of including a \$5 bill with the mailing. More research is needed to derive conclusions about this as well, such as possibly sending the mail questionnaire to parents *without* the \$5 bill enclosed.

In summary, offering a mail questionnaire option to nonrespondents, particularly in the latter waves of longitudinal telephone surveys, appears to improve response rates and may help retain sample members.

Table 3. Demographics of respondents in experimental groups

	Group 1: Reminder letter only	Group 2: Letter, plus enclosed \$5	Group 3: Letter, plus \$5, plus hard-copy questionnaire
	Percent		
Disability category			
Learning disability	#	11.1 (9.26)	8.3 (5.76)
Speech impairment	#	11.1 (9.26)	8.3 (5.76)
Mental retardation	9.1 (10.84)	#	5.6 (4.77)
Emotional disturbance	18.2 (14.54)	16.7 (10.98)	16.7 (7.76)
Hearing impairment	27.3 (16.79)	5.6 (6.75)	8.3 (5.76)
Visual impairment	9.1 (10.84)	27.8 (13.20)	5.6 (4.77)
Orthopedic impairment	9.1 (10.84)	11.1 (9.26)	11.1 (6.55)
Other health impairment	9.1 (10.84)	#	8.3 (5.76)
Autism	#	#	16.7 (7.76)
Traumatic brain injury	18.2 (14.54)	11.1 (9.26)	2.8 (3.42)
Multiple disabilities	#	5.6 (6.75)	8.3 (5.76)
Deaf/blindness	#	#	#
Age (as of 7/15/2001)			
13 to 14	9.1 (10.84)	27.8 (13.20)	40.0 (10.35)
15	45.5 (18.77)	22.2 (12.25)	22.9 (8.87)
16	27.3 (16.79)	33.3 (13.89)	17.1 (7.96)
17	18.2 (14.54)	16.7 (10.98)	20.0 (8.45)
Gender			
Male	81.8 (14.54)	61.1 (14.36)	63.9 (10.01)
Female	18.2 (14.54)	38.9 (14.36)	36.1 (10.01)
Household income			
\$25,000 or less	45.5 (18.77)	38.9 (14.36)	28.1 (9.94)
\$25,001 to \$50,000	45.5 (18.77)	16.7 (10.98)	37.5 (10.70)
More than \$50,000	9.1 (10.84)	44.4 (14.64)	34.4 (10.50)
Race/ethnicity			
White	36.4 (18.13)	77.8 (12.25)	69.4 (9.60)
African American	18.2 (14.54)	11.1 (9.26)	13.9 (7.21)
Hispanic	45.5 (18.77)	5.6 (6.75)	13.9 (7.21)
Number of prior interviews			
0	0	5.0 (6.09)	6.5 (4.55)
1	15.4 (12.50)	5.0 (6.09)	26.1 (8.09)
2	53.9 (17.28)	25.0 (12.1)	26.1 (8.09)
3	30.8 (16.00)	65.0 (13.3)	41.3 (9.10)
Youth ever held back a grade	55.6 (20.70)	16.7 (10.98)	33.3 (10.26)
Youth ever suspended or expelled	55.6 (20.70)	22.2 (12.25)	27.3 (9.69)
Parent ever been through mediation about special education	11.1 (13.10)	17.7 (11.56)	23.5 (9.09)
Satisfied with school	60.0 (19.37)	82.4 (11.56)	79.4 (8.67)
	<i>N</i>		
	13	20	46

NOTE: Standard errors are in parentheses.

Rounds to zero.

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Appendix A

Table A-1. Demographics of experimental group members and remaining NLTS2 sample at the time of the experiment

	Remaining NLTS2 sample	Total experimental sample	Group 1: Reminder letter only	Group 2: Letter, plus enclosed \$5	Group 3 : Letter, plus \$5, plus hard-copy questionnaire
	Percent				
Disability category					
Learning disability	10.6 (0.71)	10.4 (1.69)	13.5 (3.28)	7.9 (2.52)	9.8 (2.91)
Speech impairment	11.15 (0.73)	9.0 (1.58)	8.8 (2.72)	7.9 (2.52)	10.4 (2.99)
Mental retardation	9.2 (0.67)	10.6 (1.70)	8.8 (2.72)	11.2 (2.96)	11.7 (3.14)
Emotional disturbance	10.0 (0.69)	11.7 (1.78)	13.5 (3.28)	9.6 (2.75)	12.3 (3.21)
Hearing impairment	9.8 (0.69)	8.0 (1.50)	6.5 (2.36)	7.9 (2.52)	9.8 (2.91)
Visual impairment	6.3 (0.56)	6.3 (1.34)	5.3 (2.15)	7.9 (2.52)	5.5 (2.24)
Orthopedic impairment	9.7 (0.68)	11.0 (1.73)	11.2 (3.02)	10.1 (2.83)	11.7 (3.14)
Other health impairment	10.2 (0.70)	11.6 (1.77)	12.9 (3.22)	15.2 (3.36)	6.1 (2.35)
Autism	8.3 (0.64)	6.7 (1.38)	5.3 (2.15)	7.3 (2.44)	7.4 (2.56)
Traumatic brain injury	4.0 (0.45)	4.3 (1.12)	5.9 (2.26)	3.4 (1.69)	3.7 (1.84)
Multiple disabilities	9.3 (0.67)	9.4 (1.61)	7.7 (2.55)	10.7 (2.89)	9.8 (2.91)
Deaf/blindness	1.4 (0.27)	1.2 (0.60)	0.6 (0.73)	1.1 (0.99)	1.8 (1.32)
Age (as of 7/15/2001)					
13 to 14	34.9 (1.10)	31.8 (2.58)	31.8 (4.46)	28.7 (4.24)	35.2 (4.69)
15	23.9 (0.98)	21.6 (2.28)	24.7 (4.14)	18.5 (3.64)	21.6 (4.04)
16	24.7 (1.00)	29.8 (2.53)	27.1 (4.26)	32.6 (4.39)	29.6 (4.48)
17	16.5 (0.86)	16.9 (2.07)	16.5 (3.56)	20.2 (3.76)	13.6 (3.36)
Gender					
Male	62.9 (1.10)	68.5 (2.57)	74.1 (4.20)	66.3 (4.43)	65.0 (4.67)
Female	35.1 (1.10)	31.5 (2.57)	25.9 (4.20)	33.7 (4.43)	35.0 (4.67)
Household income					
\$25,000 or less	33.1 (1.14)	33.4 (2.74)	36.8 (4.89)	31.9 (4.56)	31.5 (4.76)
\$25,001 to \$50,000	34.0 (1.15)	35.1 (2.77)	36.2 (4.87)	36.2 (4.71)	32.9 (4.81)
More than \$50,000	32.9 (1.14)	31.5 (2.70)	27.0 (4.50)	31.9 (4.56)	35.6 (4.90)
Race/ethnicity					
White	61.4 (1.12)	65.8 (2.62)	65.3 (4.56)	66.9 (4.41)	65.0 (4.67)
African American	21.6 (0.95)	19.4 (2.19)	20.0 (3.84)	19.1 (3.68)	19.0 (3.84)
Hispanic	13.8 (0.80)	13.1 (1.87)	14.1 (3.34)	12.4 (3.08)	12.9 (3.28)
Number of prior interviews					
0	0	5.0 (1.12)	4.5 (4.41)	4.0 (1.70)	6.5 (2.18)
1	18.4 (0.84)	25.8 (2.23)	25.0 (3.90)	21.0 (3.60)	31.5 (4.11)
2	37.4 (1.05)	31.0 (2.36)	34.5 (4.20)	33.0 (4.16)	25.5 (3.85)
3	44.2 (1.08)	38.2 (2.48)	36.0 (4.24)	42.0 (4.36)	36.5 (4.26)
Youth ever held back a grade	32.1 (1.10)	32.4 (2.65)	29.5 (4.46)	33.9 (4.57)	33.8 (4.72)
Youth ever suspended or expelled	28.6 (1.06)	29.6 (2.57)	34.8 (4.65)	25.7 (4.18)	28.5 (4.49)
Parent ever been through mediation about special education	12.9 (0.80)	15.2 (2.03)	13.6 (3.36)	13.2 (3.27)	19.0 (3.90)
Satisfied with school	77.5 (0.98)	77.2 (2.37)	76.8 (4.12)	78.1 (3.98)	76.6 (4.21)
N	3,296	600	200	200	200

NOTE: Standard errors are in parentheses.