



Tracking in the United States: Descriptive Statistics from NELS

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Abstract—Although there is a general sense among educational researchers that the practice of ability grouping is widespread, national descriptive statistics on the subject are scarce. This note presents data from the *National Education Longitudinal Study of 1988* that suggest a sizeable majority of 8th and 10th grade students are tracked. Also, it is found that informal tracking patterns in the 8th grade and 10th grade seem to be broadly similar. Lastly, we note that students from low socioeconomic backgrounds, blacks, and Hispanics are more likely to be enrolled in lower track classes and less likely to be in upper track classes. [JEL I20]

1. INTRODUCTION

A GREAT DEAL of academic research has been devoted to investigating the controversial issues surrounding ability grouping, or tracking.¹ Concerns that factors other than ability are used to determine track placement, and that tracking is detrimental to student learning have prompted many schools to reconsider their tracking policies. Despite this intense interest, national student-level data on the most basic aspects of the practice are difficult to find.² Using information on 8th and 10th graders obtained from the *National Education Longitudinal Study of 1988*, a nationally representative student survey, we attempt to fill this gap in the literature.

Specifically, we present basic descriptive data on tracking patterns in public secondary schools in the United States. In addition, we investigate whether the extent of tracking differs by grade, and ask if there is a relationship between tracking patterns and the socioeconomic status of students. Finally, we examine the racial/ethnic breakdown of students in each track. We hope that this overview provides useful information for policy makers and researchers alike.

2. THE DATA

Our data source is the first two waves of the *National Educational Longitudinal Study of 1988* (NELS), conducted by the National Center for Education Statistics (1992). NELS provides 8th and 10th grade data (from the years 1988 and 1990, respectively) on more than 20,000 students across the United States. It is unique among nationally representative student surveys in that it allows the researcher to link a student with a particular class and teacher in a given subject area (either mathematics, science, english or social studies).

Teachers were asked to provide information on the overall achievement level and academic track of their class. Thus we are able to avoid using student self-reports, which have been shown to be unreliable measures of actual track assignment (Rosenbaum, 1980). Eighth and 10th grade classes were characterized by teachers as above average, average, below average, or heterogeneous, according to the overall achievement level of students as compared to the school average.³ Tenth grade classes were also divided into the more traditional categories of honors, academic, general,

Table 1. Percent of 8th grade public school students in average, above average, below average, and heterogenous classes by subject, 1988

	Math (8953)	English (8874)	Science (8337)	Social studies (8321)
Above average	25.8	25.8	23.1	23.6
Average	38.8	38.7	37.8	38.3
Below average	20.9	19.8	17.2	17.8
Heterogenous	14.4	15.7	21.8	20.2

Notes: Sample sizes in parentheses. Population weights were used to correct for the over-sampling of certain groups. See National Center for Education Statistics (1992, pp. 33 and 45) for a discussion of the weights used in NELS.

Table 2. Percent of 10th grade public school students in average, above average, below average, and heterogenous classes by subject, 1990

	Math (6210)	English (7538)	Science (5253)	Social studies (3624)
Above average	24.6	25.3	29.1	25.6
Average	39.4	41.6	41.5	42.5
Below average	25.1	18.4	17.7	14.2
Heterogenous	10.8	14.7	11.6	17.7

Notes: Sample sizes in parentheses. Population weights were used to correct for the over-sampling of certain groups. See National Center for Education Statistics (1992, pp. 33 and 45) for a discussion of the weights used in NELS.

Table 3. Percent of 10th grade public school students in honors, academic, general, vocational and other classes by subject, 1990

	Math (6232)	English (7642)	Science (5312)	Social studies (3719)
Honors	9.9	16.7	11.3	12.2
Academic	52.8	33.0	42.8	38.9
General	30.9	42.6	41.0	44.8
Vocational	3.6	2.4	1.7	1.4
Other	2.8	5.3	3.3	2.7

Notes: Sample sizes in parentheses. Population weights were used to correct for the over-sampling of certain groups. See National Center for Education Statistics (1992, pp. 33 and 45) for a discussion of the weights used in NELS.

vocational or other track.⁴ These tracking measures were combined with standard information from student, parent, and administrator questionnaires to produce the student-level statistics presented below.

3. DESCRIPTIVE STATISTICS

Table 1 presents tracking data for 8th graders in math, english, science, and social studies classes. Per-

haps the most striking feature of Table 1 is the high proportion of students who are, at least informally, tracked in the 8th grade. For instance, only 14.4% of students enrolled in math were in a class considered by its teacher to have students of widely differing achievement levels. The corresponding figure for students taking english is 15.7%, while approximately 20% of science and social studies students were enrolled in heterogenous classes.

Table 4. Percent of 10th grade public school students in above average, average, below average, and heterogeneous classes by socioeconomic status, 1990

	Math				English				Science				Social studies			
	Q1 (1448)	Q2 (1558)	Q3 (1550)	Q4 (1459)	Q1 (1780)	Q2 (1935)	Q3 (1885)	Q4 (1729)	Q1 (1181)	Q2 (1355)	Q3 (1309)	Q4 (1282)	Q1 (820)	Q2 (926)	Q3 (873)	Q4 (876)
Above average	14.0	22.2	26.1	37.6	13.6	20.3	28.3	41.1	19.4	22.2	29.3	45.5	15.8	20.8	29.2	38.4
Average	34.8	40.1	40.9	43.4	39.5	43.4	43.0	40.5	39.2	41.0	45.8	40.2	40.0	46.2	42.2	39.7
Below average	38.8	25.8	21.9	12.1	32.1	20.8	12.8	6.9	30.5	20.6	14.5	5.9	25.7	14.8	12.4	4.5
Heterogenous	12.3	12.1	11.1	6.9	14.8	15.4	15.9	11.5	10.9	16.2	10.4	8.41	8.5	18.3	16.2	17.4

Notes: Q1 through Q4 denote socioeconomic quartiles from lowest to highest. Sample sizes in parentheses. Population weights were used to correct for the oversampling of certain groups. See National Center for Education Statistics (1992, pp. 33 and 45) for a discussion of the weights used in NELS.

Table 5. Percent of 10th grade public school students in honors, academic, general, vocational and other classes by socioeconomic status, 1990

	Math				English				Science				Social studies			
	Q1 (1455)	Q2 (1570)	Q3 (1551)	Q4 (1458)	Q1 (1802)	Q2 (1962)	Q3 (1920)	Q4 (1748)	Q1 (1186)	Q2 (1362)	Q3 (1330)	Q4 (1306)	Q1 (838)	Q2 (957)	Q3 (897)	Q4 (900)
Honors	3.7	6.8	10.9	18.7	7.7	12.0	18.5	30.6	6.7	6.5	11.0	21.9	6.3	8.6	12.0	22.7
Academic	41.7	53.4	54.9	62.3	27.1	32.4	37.0	35.6	32.7	41.9	45.0	49.4	29.7	39.8	40.3	46.1
General	42.6	32.8	30.5	16.5	49.3	48.5	39.4	32.4	52.6	45.1	40.8	27.1	56.2	47.2	45.5	29.0
Vocational	7.3	4.2	2.0	1.1	6.1	2.2	1.2	0.4	1.9	2.6	1.8	0.6	2.3	1.5	1.2	0.7
Other	4.8	2.8	1.7	1.4	9.8	4.9	3.9	1.0	6.2	3.9	1.5	0.9	5.5	2.9	1.0	1.5

Notes: Q1 through Q4 denote socioeconomic quartiles from lowest to highest. Sample sizes in parentheses. Population weights were used to correct for the oversampling of certain groups. See National Center for Education Statistics (1992, pp. 33 and 45) for a discussion of the weights used in NELS.

Table 6. Percent of 10th grade public school students in above average, average, below average, and heterogeneous classes by race and ethnic origin, 1990

	Math			English			Science			Social studies		
	W(4414)	B(622)	H(724)	W(5206)	B(818)	H(947)	W(3626)	B(561)	H(640)	W(2658)	B(314)	H(375)
Above average	27.1	12.4	18.3	27.1	17.1	17.8	32.0	19.7	20.2	27.0	23.9	15.0
Average	40.8	37.4	32.9	42.3	40.7	40.6	42.3	37.8	40.6	43.1	41.0	42.7
Below average	22.3	34.8	36.0	15.9	28.2	23.9	15.9	29.1	20.8	12.4	21.5	20.6
Heterogenous	9.8	15.4	12.8	14.6	14.0	17.6	9.7	13.4	18.3	17.5	13.7	21.7

Notes: 'W' denotes white, 'B' black, and 'H' Hispanic. Sample sizes in parentheses. Population weights were used to correct for the oversampling of certain groups. See National Center for Education Statistics (1992, pp. 33 and 45) for a discussion of the weights used in NELS.

Table 7. Percent of 10th grade public school students in honors, academic, general, vocational and other classes by subject, race, and ethnic origin, 1990

	Math			English			Science			Social studies		
	W(4429)	B(624)	H(722)	W(5280)	B(821)	H(963)	W(3678)	B(555)	H(645)	W(2728)	B(329)	H(381)
Honors	10.5	6.9	7.4	17.8	9.5	14.0	11.7	10.1	9.3	12.7	11.0	8.4
Academic	55.9	39.8	45.6	33.9	30.5	32.0	44.1	36.8	41.0	40.3	34.0	29.2
General	27.8	45.8	38.3	42.3	44.4	43.9	40.0	44.9	42.5	43.4	49.1	56.0
Vocational	3.5	3.3	5.1	2.2	4.6	1.6	1.7	1.1	1.9	1.6	0.2	1.9
Other	2.3	4.2	3.7	3.8	11.1	8.6	2.5	7.1	5.2	2.0	5.8	4.5

Notes: 'W' denotes white, 'B' black, and 'H' Hispanic. Sample sizes in parentheses. Population weights were used to correct for the oversampling of certain groups. See National Center for Education Statistics (1992, pp. 33 and 45) for a discussion of the weights used in NELS.

It is also clear from Table 1 that 8th grade tracking patterns do not differ substantially by subject. In each subject approximately a quarter of the students were enrolled in above average achievement classes, and a little less than 40% were enrolled in average achievement classes. Students in science and social studies were somewhat more likely to be enrolled in a heterogeneous class than students in either math or english.

Basic ability grouping data for 10th graders is presented in Table 2. Again, a sizable majority of students in all four subjects are in homogenous classes. In fact, between 8th and 10th grade there is a modest but noticeable shift away from heterogeneous to homogenous classes. This shift is most pronounced for students taking math and science. Only 10.8% and 11.6% of 10th grade math and science students were enrolled in heterogeneous classes, respectively. In contrast, statistics presented by Oakes, 1990 (p. 20) indicate that approximately 20% of secondary math and science classes (as opposed to students) were not tracked in the mid-eighties.⁵ Although this comparison suggests that heterogeneous classes tended to be smaller than tracked classes, we found no evidence of this in the NELS data.⁶

Table 3 examines the distribution of 10th graders across the traditional high school tracks in each of the four subject areas. With the exception of those enrolled in math, students are almost evenly divided between academic and non-academic classes. In math, on the other hand, more than 60% of 10th graders are in what would be considered academic or college-preparatory classes. In all subjects, a small minority of students are enrolled in classes considered to be vocational or "other" track, while a somewhat larger minority are enrolled in honors classes.

In Tables 4 and 5 students are divided into quartiles according to socioeconomic status.⁷ A great deal of research has been devoted to investigating whether family background variables are important determinants of track placement.⁸ Although evidence from past studies (which typically control for student ability and other factors) has been mixed, it is clear

from these tables that if one does not control for ability, a strong correlation between socioeconomic status and track placement exists.

For instance, whereas over 30% of english students in the highest socioeconomic quartile are enrolled in honors or advanced classes, the corresponding figure for students in the lowest quartile is 7.7%. In math, 18.7% of students in the highest quartile are enrolled in an honors class as compared to only 3.7% of students in the lowest quartile. It is interesting to note, however, that there is only a weak relationship between socioeconomic status and the percentage of students in heterogeneous classes, with students from the best backgrounds somewhat less likely to be in these classes.

Lastly, Tables 6 and 7 present tracking data by the race and ethnicity of the student. The data in these tables pertain to 10th graders. Similar data on 8th graders are presented by Braddock and Dawkins (1993).

It is clear from these tables that blacks and Hispanics are less likely to be enrolled in upper-track classes, and more likely to be enrolled in non-academic classes than whites. This pattern is present for both the formal and informal 10th grade tracking measures. The relationship between race, ethnicity and heterogeneous classes is more difficult to characterize. For instance, whites are underrepresented in heterogeneous math and science classes as compared to blacks and Hispanics, whereas in english classes this is not the case. Overall, the data in Tables 6 and 7 support the often voiced criticism that ability grouping tends to lead to race separation (see, for instance, Oakes, 1992, p. 13).

4. CONCLUSION

The purpose of this note has been to provide descriptive statistics on student tracking in the United States. We hope that this information will inform educational policy and facilitate further research on the numerous issues surrounding the use of tracking in U.S. schools. Additional data on tracking patterns by region of the country, and degree of urbanization are available upon request from the authors.

NOTES

1. See, for instance, Slavin (1987) and Slavin (1990) for reviews of the literature on the effects of ability grouping on the achievement of elementary and secondary students. See Braddock and Slavin (1993) or Oakes (1992) for broader surveys of the issues having to do with the tracking of students.
2. Published studies that provide information on the extent of tracking in the United States are Braddock (1990) and Oakes (1990). However, the unit of analysis in Braddock (1990) is the school as opposed to the individual student, and in Oakes (1990) the unit of analysis is the classroom.
3. Specifically, teachers were asked, "[w]hich of the following best describes the achievement level of

the 8th [10th] graders in this class compared with the average 8th [10th] grade student in the school? Higher achievement levels, average achievement levels, lower achievement levels, or widely differing achievement levels." Of course, one cannot assume that every teacher in the sample interpreted this question in the same manner. However, given the available data, this is the only method of distinguishing between heterogeneous and tracked classes. It should also be noted that other research has relied on similar tracking measures (Oakes, 1990), and that there is evidence that teacher perceptions with regard to class homogeneity closely correspond to information provided by school administrators (Slavin et al., 1989).

4. Teachers were asked, "[w]hich of the following best describes the 'track' this class is considered to be? Academic, advanced or honors, general, vocational/technical/business, or other?"
5. The measure of tracking used by Oakes (1990) is almost identical to that in the NELS data. Teachers were asked if their classes were composed of students of a wide range of ability levels, predominantly low ability levels, predominantly average ability levels, or predominantly high ability levels (Oakes, 1990, p. 19).
6. Students taking a tracked 10th grade math class had an average of 22.5 peers in their class. The corresponding figure for students in untracked 10th grade math classes was 22.8. Differences of similarly small magnitudes were found for students in other subjects.
7. Socioeconomic status was determined using information on family income and parents' occupation and education. See National Center for Education Statistics (1992), (p. 125) for details on the construction of this variable.
8. Recent work in this area has been done by Sorensen (1987), Gamoran and Mare (1989) and Gamoran (1992). Earlier studies include Heynes (1974), Alexander et al. (1978), and Rehberg and Rosenthal (1978). Also, see Argys et al. (forthcoming) for an analysis using NELS data. Brewer et al. (forthcoming) provides a non-technical description of this analysis.

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