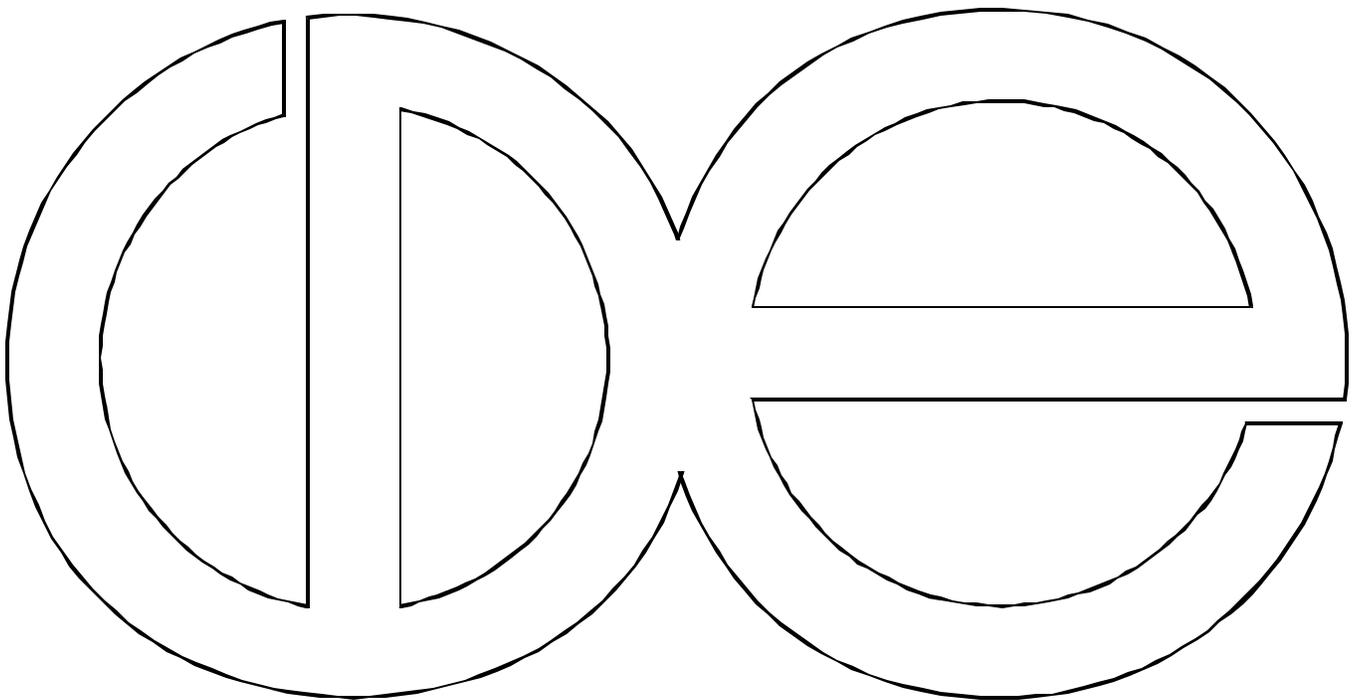


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**Should We End Social Promotion?
Truth and Consequences**

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SHOULD WE END SOCIAL PROMOTION? TRUTH AND CONSEQUENCES¹

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In this paper, I review the extent and consequences of grade retention in elementary and secondary school. Testing for readiness, achievement, or mastery plays a substantial—but not easily quantifiable role in grade retention. It will play a greater role if the present movement toward test-based promotion policies continues. Unfortunately, such policies are likely to raise both the public and private costs of schooling without corresponding educational benefit.

First, I review recent proposals for test-based grade promotion and retention. These are based on politically attractive, but scientifically unsupported claims about the benefits of retention, and minority students are more likely to be subject to them. Second, I outline what we know about rates, trends, and differentials in grade retention in the United States. Sound data are scarce, but current retention rates are much higher than is generally believed. At least 15 percent of pupils are retained between ages 6 to 8 and ages 15 to 17, and a large share of retention occurs before or after those ages. Retention rates are much higher for boys and members of minority groups than for girls or the white majority. Retention rates have also grown substantially over the past two decades. Third, I review the scientific evidence about the effects of retention in grade. Several recent studies – purporting to show positive

¹ An earlier version of this paper was given at the conference of the Harvard Civil Rights Project on Civil Rights and High Stakes Testing, Columbia University, December 1998. This draft is based largely on material in Chapter 6 of National Research Council, *High Stakes: Testing for Tracking Promotion and Graduation*, Jay M. Heubert and Robert M. Hauser, eds., Washington, DC: National Academy Press, 1999. Samuel Messick, Marguerite Clarke, Jay P. Heubert, and Taissa S. Hauser contributed substantially to this chapter of the NRC report.

effects of grade retention – are in fact consistent with earlier findings that the academic benefits of retention typically are both temporary and costly. When previous academic performance and relevant social characteristics are controlled, past grade retention accelerates current school dropout. There is no evidence for claims that new retention policies will be coupled with effective remediation of learning deficits that would be worth their cost or would offset the well-established long-term negative effects of retention.

The typical organization of American schools into grades by the ages of their students is challenged by large variations in achievement within ages and grades. The resulting tension is reduced somewhat by overlap in the curriculum from one grade to the next. It is also reduced by strategies for grouping students by observed levels of aptitude or mastery: These include special education placement, academic tracking, extended kindergarten, and grade retention. The age at entry into graded school has gradually crept upward since the early 1970s, reversing one of the major historic trends contributing to the growth of schooling in the United States. Data on early school transitions and on the possible reasons for change in those transitions are grossly inadequate, but it would appear that retention in pre-kindergarten and kindergarten has played some role in the rise of age at entry into the first grade. Excepting the ubiquitous tendency for girls to enter (and complete) primary and secondary school at earlier ages than boys, there is little sign of social differentiation in age at school entry.

Socially differentiated patterns of grade retention develop rapidly after entry into graded school, and they persist through secondary school. White girls progress through school most rapidly, while African-American boys are most often held back in grade. By ages 15 to 17, about 30 percent of

white girls, but close to half of African-American boys are below the modal grade for all students of their age—or have left school. Rates of grade retardation at those ages have remained high, even though school dropout has declined.

Given the high rates of retention created by current evaluation practices—and their disparate impact on minority youth—the possibility of substantially increased, test-based retention creates a number of concerns. For example, the costs of grade repetition are large—both to those retained and those who must pay for repeated schooling. Moreover the presence of older students creates serious management problems for schools. Most important, the available evidence shows that retention has no lasting educational benefits, that it typically leads to lower achievement (than promotion) and to higher rates of school dropout.

It is possible to imagine an educational system in which test-based promotion standards are combined with effective diagnosis and remediation of learning problems, yet past experience suggests that American school systems may not have either the will or the means to enact such fair and effective practices. Such a system would include well-designed and carefully aligned curricular standards, performance standards, and assessments. Teachers would be well trained to meet high standards in their classrooms, and students would have ample notice of what they are expected to know and be able to do. Students with learning difficulties would be identified years in advance of high-stakes deadlines, and they and their parents and teachers would have ample opportunities to catch up before deadlines occur. Accountability for student performance would not rest solely or even primarily on individual

students, but also, collectively, on educators and parents. There is no positive example of such a system in the United States, past or present, whose success is documented by credible research.

SOCIAL PROMOTION, RETENTION, AND TESTING

Much of the current public discussion of high-stakes testing of individual students centers on calls for “an end to social promotion.” In a memorandum to the secretary of education, President Clinton (1998:1-2) wrote that he had “repeatedly challenged States and school districts to end social promotions—to require students to meet rigorous academic standards at key transition points in their schooling career, and to end the practice of promoting students without regard to how much they have learned Students should not be promoted past the fourth grade if they cannot read independently and well, and should not enter high school without a solid foundation in math. They should get the help they need to meet the standards before moving on.” In his 1999 State of the Union address, the President reiterated the proposal – to sustained applause – by calling for legislation to withhold federal education funds from school districts practicing social promotion. As recently as October 1999, President Clinton told a “summit” meeting of political and business leaders, “that students who are held back because they fail to vault newly raised bars should be treated with tough love. . . . ‘look dead in the eye some child who has been held back’ and say, ‘This doesn't mean there's something wrong with you, but we'll be hurting you worse if we tell you you're learning something when you're not.’ ” (Steinberg 1999).

The administration's proposals for educational reform strongly tie the ending of social promotion to early identification and remediation of learning problems. The president calls for smaller classes, well-prepared teachers, specific grade-by-grade standards, challenging curriculum, early identification of students who need help, after-school and summer school programs, and school accountability. He also calls for “appropriate use of tests and other indicators of academic performance in determining whether students should be promoted” (Clinton, 1998:3). The key questions are whether testing will be used appropriately in such decisions and whether early identification and remediation of learning problems will take place successfully.

Test-based requirements for promotion are not just being proposed; they are being implemented. According to a report by the American Federation of Teachers (1997b), 46 states either have or are in the process of developing assessments aligned with their content standards. Seven of these states, up from four in 1996, require schools and districts to use the state standards and assessments in determining whether students should be promoted into certain grades.²

For some years, Iowa and California had taken strong positions against grade retention, based on research or on the reported success of alternative intervention programs (George, 1993; Iowa Department of Education, 1998). But California’s past policies have been repudiated by the new governor, Gray Davis, who has promoted a legislative package that will mandate test-based grade retention in elementary and secondary schools.

² The states are Arkansas, Florida, Louisiana, New Mexico, North Carolina, South Carolina, and West Virginia. A report from the Council of Chief State School Officers (1998) lists five states with required testing for promotion: Louisiana, North Carolina, New York, South Carolina, and Virginia.

Governor Bush of Texas has proposed that “3rd graders who do not pass the reading portion of the Texas Assessment of Academic Skills would be required to receive help before moving to regular classrooms in the 4th grade. The same would hold true for 5th graders who failed to pass reading and math exams and 8th graders who did not pass tests in reading, math, and writing. The state would provide funding for locally developed intervention programs” (Johnston, 1998).

In 1998 New York City Public School Chancellor Rudy Crew proposed that 4th and 7th graders be held back if they fail a new state reading test at their grade level, beginning in spring 2000. Crew's proposal initially combined testing of students with “a comprehensive evaluation of their course work and a review of their attendance records.” A two-year delay in implementation of the tests would permit schools “to identify those students deemed most at risk and give them intensive remedial instruction” (Steinberg, 1998a). However, late in the spring of 1999, under intense political pressure, Crew abandoned established policies and ordered thousands of third and sixth graders who had performed poorly on a new reading test to attend summer school and pass a new test at summer’s end or be held back a year. The New York Public Schools were promptly sued for violating their own rules (Archibold, 1999a, New York Times, 1999). The inappropriate reliance on a single test performance came back to haunt the Crew administration when it turned out that the test was improperly normed, and thousands of students had been failed when they should have passed (Hartocollis, 1999; Archibold, 1999b).

In 1996-1997 the Chicago Public Schools instituted a new program to end social promotion. Retention decisions are now based almost entirely on student performance on the Iowa Test of Basic

Skills (ITBS) at the end of grades 3, 6, and 8. Students who fall below specific cutoff scores at each grade level are required to attend highly structured summer school programs and to take an alternative form of the test at summer's end.³ At the end of the 1996-1997 school year, 32 percent, 31 percent, and 21 percent of students failed the initial examination at grades 3, 6, and 8, respectively. Out of 91,000 students tested overall, almost 26,000 failed. After summer school, 15 percent, 13 percent, and 8 percent of students were retained at the three grade levels (Chicago Public Schools, 1998a).⁴

The current enthusiasm for the use of achievement tests to end social promotion raises three concerns. First, much of the public discussion and some recently implemented or proposed testing programs appear to ignore existing standards for appropriate test use (National Research Council 1998: Ch. 6). Second, there is persuasive research evidence that grade retention typically has no beneficial academic or social effects on students.⁵ The past failures of grade retention policies need not be repeated. But they provide a cautionary lesson: Making grade retention--or the threat of retention--an effective educational policy requires consistent and sustained effort. Third, public discussion of social

³The *1997-1998 Guidelines for Promotion in the Chicago Public Schools* also list minimum report card requirements and a minimum attendance requirement, but "students who score at or above grade level on both the Reading and Mathematics sections of the ITBS are exempted from the latter requirement" (Chicago Public Schools, 1997a). This use of the ITBS appears to be in conflict with the publisher's recommendations about "inappropriate purposes" of testing: "If a retention decision is to be made, classroom assessment data gathered by the teacher over a period of months is likely to be a highly relevant and accurate basis for making such a decision. A test score can make a valuable contribution to the array of evidence that should be considered. However, a test score from an achievement battery should not be used alone in making such a significant decision" (Hoover et al., 1994). However, the test publisher (but not the developers) have endorsed this use of the ITBS by the Chicago Public Schools.

⁴ Between 2 and 3 percent of students failed the initial exam at each grade level but were ultimately "waived" into the next grade.

⁵ The failure of past programs is recognized in President Clinton's initiative to end social promotion: "Ending social promotions by simply holding more students back is the wrong choice. Students who are required to repeat a year are more likely to eventually drop out, and rarely catch up academically with their peers. The right way is to ensure that more students are prepared to meet challenging academic standards in the first place" (Clinton, 1998).

promotion has made little reference to current retention practices--in which a very large share of American schoolchildren are already retained in grade. In part, this is because of sporadic data collection and reporting, but far more consistent statistical data are available about the practice of grade retention than, say, about academic tracking. It is possible to describe rates, trends, and differentials in grade retention using data from the U.S. Bureau of the Census, but these data have not been used fully to inform the public debate.

TRENDS AND DIFFERENTIALS IN GRADE RETENTION

To support its analyses of high-stakes testing for promotion and retention, the NRC Committee on Appropriate Test Use assembled and analyzed data on rates, trends, and differentials in grade retention (National Research Council 1998: Table 6-1). Some of the available data were collected by state education agencies, but the most uniform, long-term data have been collected by the U.S. Bureau of the Census in connection with its Current Population Survey, the same the monthly household survey that produces important economic statistics, like the unemployment rate.

Sources of Evidence

No federal or independent agency monitors social promotion and grade retention. I doubt that governments currently make important policy decisions about any other social process with so little in the way of sound, basic, descriptive information. Occasional data on retention are available for some states and localities, but coverage is sparse, and little is known about the comparability of these data

(Shepard and Smith, 1989). For example, the denominators of retention rates may be based on beginning-of-year or end-of-year enrollment figures. The numerators may include retention as of the end of an academic year or as of the end of the following summer session. Some states include special education students in the data; others exclude them. In the primary grades, retention is usually an all-or-nothing matter; in high school, retention may imply that a student has completed some requirements but has too few credits to be promoted.

Some states do not collect retention data at all, or collect very limited data. For example, we have confirmed that 13 states--Colorado, Connecticut, Illinois, Kansas, Montana, Nebraska, Nevada, New Hampshire, New Jersey, North Dakota, Pennsylvania, Utah, and Wyoming--collect no statewide data on grade retention. Twenty-two states, plus the District of Columbia, provided data on retention at some grade levels, but in some cases the data were very limited. For example, New York State collects such data only at the 8th grade.

Retention rates are highly variable across states. They are unusually high in the District of Columbia, whose students are largely black. Rates are relatively low in some states, like Ohio, including states with relatively large minority populations, like South Carolina and Georgia. Retention rates tend to be relatively high in the early primary grades--though not in kindergarten--and in the early high school years. Perhaps the most striking fact from this effort to bring together available data is that--despite the prominence of social promotion as an issue of educational policy--very little information about it is available.

The main federal source of information about education, The National Center for Education Statistics, provides essentially no statistics about grade retention or social promotion. For example, there are no data on this subject in current editions of its two major statistical compendia, the *Digest of Education Statistics* (National Center for Education Statistics, 1999a) and the *Condition of Education* (National Center for Education Statistics, 1999b).

The best current source of information on levels, trends, and differentials in grade retention is the Current Population Survey (CPS) of the U.S. Bureau of the Census. Using published data from the annual October School Enrollment Supplement of the CPS, it is possible to track the distribution of school enrollment by age and grade each year for groups defined by sex and race/ethnicity. These data have the advantage of comparable national coverage from year to year, but they say nothing directly about educational transitions or about the role of high-stakes testing in grade retention. We can only infer the minimum rate of grade retention by observing changes in the enrollment of children below the modal grade level for their age from one calendar year to the next. Suppose, for example, that 10 percent of 6-year-old children were enrolled below the 1st grade in October of 1994. If 15 percent of those children were enrolled below the 2nd grade in October of 1995, when they were 7 years old, we would infer that at least 5 percent were held back in the 1st grade between 1994 and 1995.

One egregious exception to the lack of federal information about grade retention and promotion is a new Education Department publication, *Taking Responsibility for Ending Social Promotion: A Guide for Educators and State and Local Leaders* (U.S. Department of Education, 1999). While it also cites more reputable estimates of grade retention, the *Guide* features a “conservative” estimate

from “1996 Current Population Statistics” that “only about 3 percent of students are two or more years over age for their grade (an indication that they have been retained at least once)” (p. 6).⁶ This estimate is indefensibly low for three reasons. First, it covers only currently enrolled students, ignoring persons of normal school age who have fallen behind and dropped out. Second, by referring to K-12 students at all grade levels, it aggregates data for children in the primary grades, who have had few years at risk of retention, with data for children in higher grades, who have had many years at risk of retention. Third, by counting as “retained” only those students who are two or more years above the modal age for their grade, the *Guide* fails to include a large number of retained students. I cannot think of any rationale for this statistic, other than an effort to mislead the public about the true extent of grade retention.

Extended Kindergarten Attendance

Historically, there has been great variation in age at school entry in the United States, which had more to do with the labor demands of a farm economy and the availability of schooling to disadvantaged groups than with readiness for school. The variability declined as school enrollment completed its diffusion from middle childhood into younger and older ages (Duncan, 1968; National Research Council, 1989).

⁶ There is no such publication as “Current Population Statistics.” Apparently, the reference is to *Current Population Reports*, Series P-20, No. 500, which reports school enrollment by age in October 1996. However, I cannot reproduce exactly the estimates reported in the *Guide*, and the Department of Education has not responded to my request for their source.

Contrary to the secular trend, the Census Bureau's statistics on grade enrollment by age show that, from the early 1970s to the late 1980s, entry into 1st grade gradually came later in the development of many children. However, for the past decade there has been little change in age at school entry. Figure 1 shows percentages of 6-year-old children who had not yet entered the 1st grade as of October of the given year.⁷ Among 6-year-old boys, only 8 percent had not yet entered the 1st grade in 1971,⁸ but 22 percent were not yet in the 1st grade in 1987, and 21 percent were not yet in the 1st grade in 1996. Among 6-year-old girls, only 4 percent had not yet entered the 1st grade in 1971, but 16 percent were not yet in the 1st grade in 1987, and 17 percent were not yet in the 1st grade in 1996. While boys are consistently more likely than girls to enter 1st grade after age 6, there are only small differences between blacks and whites in age at entry into graded school, and these differences consistently favor black children. That is, 6-year-old black children are slightly less likely than white children of the same age and sex to be enrolled below the 1st grade or not enrolled in school. Also, 6-year-old Hispanic boys are consistently more likely than white boys to have entered the 1st grade, but 6-year-old Hispanic girls are less likely than white girls to have entered the 1st grade.

It is not clear why age at school entry has increased. One contributing factor has been the influence of state laws on minimum age at school entry. Another – suggested by the initially slow school entry of white boys – is that some parents “red shirt” their children at an early age in order to give them

⁷ U.S. Bureau of the Census, *Current Population Reports*, “School Enrollment: Social and Economic Characteristics of Students” for various years. Unpublished data for 1996 were generously provided by Census Bureau staff. Percentages shown in Figure 1 are 3-year moving averages and do not agree exactly with the annual estimates reported in the text.

⁸ The percentages include those enrolled below 1st grade level and a small share of 6-year-olds who were not enrolled in school. The data are virtually unchanged if non-enrolled children are eliminated from the analysis: Neither the trends nor the differences by race-ethnicity and sex are affected.

an advantage in athletic competition later on. Early school retention is yet a third potential explanation of the trend.

Over the past two decades, attendance in kindergarten has been extended to two years for many children in American schools.⁹ There is no single name for this phenomenon, nor are there distinct categories for the first and second years of kindergarten in Census enrollment data. As Shepard (1991) reports, the names for such extended kindergarten classrooms include “junior-first,” “prefirst,” “transition,” and “readiness room.” Fragmentary reports suggest that, in some places, kindergarten retention may have been as high as 50 percent in the late 1980s (Shepard, 1989, 1991). There are also reports of inappropriate use of cognitive tests in such decisions (Shepard, 1991: 287; Shepard, et al. 1998). The degree to which early retention decisions originate with parents, e.g., to increase their children’s chances for success in athletics, rather than with teachers or other school personnel is not known. Moreover, there are no regular national estimates of the prevalence of kindergarten retention, and none of the available state data indicate exceptionally high kindergarten retention rates. From occasional national surveys, Karweit (1999) suggests that, “by first grade between 7 and 11 percent of children have been retained.”

Retention in the Primary and Secondary Grades

Age-grade retardation refers to enrollment below the modal grade level for a child’s age (and no broader meaning is either intended or implied). I have examined national rates of age-grade

⁹ Another relevant factor is change in state or local requirements about the exact age a child must reach before entering kindergarten or first grade.

retardation by age, sex, and race ethnicity for three-year age groups at ages 6 to 17 from 1971 to 1996 and, also, at parallel tabulations for young children by single years of age, 1971 to 1996. In each case, I have organized the data by birth cohort (year of birth), rather than by calendar year, so it is possible to see the evolution of age-grade retardation throughout the schooling of a birth cohort, as well as changes in age-grade retardation rates from year to year.¹⁰

The recent history of age-grade retardation is summarized in Figure 2. It shows age-grade retardation at ages 6 to 8, 9 to 11, 12 to 14, and 15 to 17 among children who reached ages 6 to 8 between 1962 and 1996. The horizontal axis shows the year in which an age group reached ages 6 to 8, so vertical comparisons among the trend lines at a given year show how age-grade retardation cumulated as a birth cohort grew older.

For example, consider children who were 6 to 8 years old in 1987 – the most recent cohort whose history can be traced all the way from ages 6 to 8 up through ages 15 to 17. At ages 6 to 8, 21 percent were enrolled below the modal grade for their age. By 1990, when this cohort reached ages 9 to 11, age-grade retardation grew to 28 percent, and it was 31 percent in 1993, when the cohort reached ages 12 to 14. By 1996, when the cohort reached ages 15 to 17, the percentage who were either below the modal grade level or had left school was 36 percent. Almost all of the growth in

¹⁰ These data have been assembled from Historical Statistics, Table A-3, “Persons 6 to 17 Years Old Enrolled Below Modal Grade, 1971 to 1995,” which is available from the U.S. Bureau of the Census at www.census.gov/population/socdemo/school/report95/ta3a-3.txt, and from selected publications in the P-20 series of *Current Population Reports*, “School Enrollment: Social and Economic Characteristics of Students,” from the U.S. Bureau of the Census (Nos. 241, 260, 272, 286, 303, 319, 333, 346, 360, 400, 408, 413, 426, 439, 443, 452, 460, 469, 474, 479, 487, and 492). Unpublished data for 1996, as well as corrections in the Historical Statistics, Table A-3, were kindly provided by Census Bureau staff.

retardation after ages 12 to 14, however, was due to dropout (4.8 percent), rather than grade retention among the enrolled.

One could read the rate of enrollment below the modal grade at ages 6 to 8 as a baseline measure, that is, as if it did not necessarily indicate that grade retention had taken place. Relative to that baseline, increases in enrollment below the modal grade at older ages clearly show the net effects of retention in grade. This reading of the data would suggest that, in most birth cohorts, retention occurs mainly between ages 6 to 8 and 9 to 11 or between ages 12 to 14 and 15 to 17.¹¹ This way of looking at the data surely understates the prevalence of grade retention, for much of it occurs within or below ages 6 to 8.

The series for ages 15 to 17 includes early school dropout, which is also shown as a separate series along the bottom of the figure. Dropout, rather than retention, evidently accounts for a substantial share of the increase in age-grade retardation between ages 12 to 14 and ages 15 to 17.

The trend in age-grade retardation at ages 6 to 8, 9 to 11, 12 to 14, and 15 to 17 can be read across Figure 2 from left to right. Age-grade retardation increased in every age group from cohorts of the early 1970s through those of the middle to late 1980s. Age-grade retardation increased at ages 15 to 17 after the mid-1970s despite the slow decline in its early school dropout component throughout the period. That is, grade retention increased while dropout decreased. Peak rates occurred earlier at older than at younger ages, suggesting that policy changes occurred in specific calendar years, rather than consistently throughout the life of successive birth cohorts. Among cohorts entering school after 1970,

¹¹ We ignore the logical possibility that age-retardation at younger ages could be counter-balanced by double-promotion at older ages.

the percentage enrolled below the modal grade level was never less than 10 percent at ages 6 to 8, and it exceeded 20 percent for cohorts of the late 1980s. The trend-lines suggest that age-grade retardation has declined slightly for cohorts entering school after the mid-1980s, but rates have not approached the much lower levels of the early 1970s.

Overall, a large share of each birth cohort now experiences grade retention during elementary school. Among children aged 6 to 8 from 1982 to 1992, age-grade retardation has reached 25 to 30 percent by ages 9 to 11.

Retention after School Entry

Enrollment below the 1st grade at age 6 is a convenient baseline against which to assess the effects of later grade retention. The comparisons of age-grade retardation at ages 7 to 9 with that at age 6 are shown in Figure 3. There are two main patterns in the series. First, grade retention continues through the elementary years at each successive age. Retention cumulates rapidly after age 6. For example, among children who were 6 years old in 1987, enrollment below the modal grade increased by almost 5 percentage points between ages 6 and 7 and by 5 more percentage points between ages 7 and 9. Second, there appears to have been a decline in retention between ages 6 and 7 after the early 1980s. That is, comparing Figure 1 with Figure 3, we can infer a shift in elementary school grade retardation downward in age from the transition between ages 6 and 7 to somewhere between ages 4 and 6.

How much grade retention is there after ages 6 to 8? And does the recent growth in grade retardation by ages 6 to 8 account for its observed growth at older ages? Figure 4 shows changes in age-grade retardation between ages 6 to 8 and each of the three older age groups.¹² Age-grade retardation grows substantially after ages 6 to 8 as a result of retention in grade. For example, among children who reached ages 6 to 8 between 1972 and 1985, almost 20 percent more were below the modal grade for their age by the time they were 15 to 17 years old. Among children who reached ages 6 to 8 between the middle 1970s and the middle 1980s, grade retardation grew by about 10 percentage points by ages 9 to 11, and it grew by close to 5 percentage points more by ages 12 to 14. Relative to ages 6 to 8, age grade retardation at ages 9 to 11 and 12 to 14 increased for cohorts who were 6 to 8 years old in the early 1970s; it was stable from the middle 1970s to the middle 1980s, and it has declined since then. However, the gap between retention at ages 15 to 17 and that at ages 6 to 8 has been relatively stable – close to 20 percentage points – possibly excepting a very recent downward turn. Thus, the rise in age at entry into 1st grade—which is partly due to kindergarten retention—accounts for much of the overall increase in age-grade retardation among teenagers.

In summary, grade retention is pervasive in American schools. No national data are available to tell us the cumulative risk of grade retention across grades 1 to 12, but some states provide enough data to make such estimates (National Research Council, 1999: Table 6-1). For example, Texas has regularly reported the percentages of students who are retained at each grade level, and the rates are reported separately by race/ethnicity. Retention rates have been stable and high from 1990 onward, well before the new initiatives to “end social promotion.” For example, if all Texas students were

¹² Again, early school dropout (at ages 15 to 17) is counted as age-grade retardation.

subject to the failure rates of 1996-97, 17 percent would fail at least once between the 1st and 8th grades, and 32 percent would fail at least once between the 9th grade and high school completion (Texas Education Agency, 1998). Among African American students, the corresponding rates are 20 percent and 42 percent, and among Hispanic students they are 21 percent and 44 percent.¹³

It is cautionary to think about the implications of “an end to social promotion,” when ages at school entry are increasing, and a large share of each new cohort of youth already experiences grade retention. To be sure, the temporal location of age-grade retardation appears to have changed over time. Cumulative rates of age-grade retardation have increased for cohorts entering school since the early 1970s, but this has occurred through a combination of later entry into 1st grade – possibly involving retention in nursery school or kindergarten—reduced retention between ages 6 and 7, and variable patterns of retention in the pre-adolescent and adolescent years.

Social Differences in Retention

While there are similarities in the age pattern of grade retardation among major population groups—boys and girls and majority and minority groups—there are also substantial differences in rates of grade retardation among them, many of which develop well after school entry. Figure 5 shows differences in grade-retardation between boys and girls at ages 6 to 8 and ages 15 to 17. Overall, the sex differential gradually increases with age from 5 percentage points at ages 6 to 8 to 10 percentage

¹³ To estimate these rates, I multiplied the complements of the reported failure rates across grade levels to estimate the probability of never being failed. The complement of that estimate is the probability of having failed at least once.

points at ages 15 to 17. That is, boys are initially more likely than girls to be placed below the modal grade for their age, and they fall further behind girls as they pass through childhood and adolescence.

The differentiation of age-grade relationships by race and ethnicity is even more striking than that by gender. Figures 6 to 9 show trends in the development of age-grade retardation by race/ethnicity in each of the four age groups: 6 to 8 years old, 9 to 11 years old, 12 to 14 years old, and 15 to 17 years old. Here, unlike the case of gender differentiation, the rates of age-grade retardation are very similar among whites, blacks, and Hispanics at ages 6 to 8. However, by ages 9 to 11, the percentages enrolled below modal grade levels are typically 5 to 10 percentage points higher among blacks or Hispanics than among whites. The differentials continue to grow with age, and at ages 15 to 17, rates of grade retardation range from 40 to 50 percent among blacks and Hispanics, while they have gradually drifted up from 25 percent to 35 percent among whites. By ages 15 to 17, there is a differential between Hispanics and blacks, favoring the latter, and this appears to follow from high rates of early school dropout among Hispanics. Figure 10 shows the rates of school dropout among 15 to 17-year-old whites, blacks, and Hispanics. There is almost no difference in the dropout rates between whites and blacks,¹⁴ but Hispanics are much more likely to leave school at an early age. Thus, early high school dropout contributes very little to the observed difference in age-grade retardation between blacks and whites, which is mainly due to retention in grade. Early dropout does account in part for the difference in age-grade retardation between Hispanics and whites or blacks.

¹⁴ Dropout by ages 15 to 17 does not indicate ultimate rates of failure to complete high school because large numbers of youth complete regular schooling through age 19 or, alternatively, pass the GED exam through their late 20s (Hauser, 1997).

In recent years, gender and race-ethnic differentials in age-grade retardation, even at young ages, are a consequence of school experience and not primarily of differentials in age at school entry. Social differentials in age-grade relationships are vague at school entry, but a hierarchy is clearly established by age 9, and it persists and grows through the end of secondary schooling. This growth can only be explained by grade-retention. By age 9, there are sharp social differentials in age-grade retardation, favoring whites and girls relative to blacks or Hispanics and boys. By ages 15 to 17, close to 50 percent of black males have fallen behind in school—30 percentage points more than at ages 6 to 8—but age-grade retardation has never exceeded 30 percent among white girls of the same age. If these rates and differentials in age-grade retardation are characteristic of a schooling regime in which social promotion is perceived to be the norm, it is cautionary to imagine what we might observe when that norm has been eliminated.

THE EFFECTS OF RETENTION

Determining whether the use of a promotion test produces better overall educational outcomes requires weighing the intended benefits against unintended negative consequences for individual students and groups of students (American Educational Research Association et al., 1985; Joint Committee on Testing Practices, 1988; Messick, 1989; National Research Council, 1998). Most of the relevant research focuses on one outcome in particular—retention in grade. Although retention rates can change even when tests are not used in making promotion decisions, the use of scores from large-scale tests to make such decisions may be associated with increased retention rates (Hendrie, 1997).

Increased retention is not a negative outcome if it benefits students. But are there positive consequences of being held back in school because of a test score? Does the student do better after repeating the grade, or would he have fared just as well or better if he had been promoted with his peers? Research data indicate that simply repeating a grade does not generally improve achievement (Holmes, 1989; House, 1989); moreover, it increases the dropout rate (Gampert and Opperman, 1988; Grissom and Shepard, 1989; Olson, 1990; Anderson, 1994; Darling-Hammond and Falk, 1995; Luppescu et al., 1995; Reardon, 1996).

Retention and Academic Achievement

For example, Holmes (1989) reports a meta-analysis of 63 controlled studies of grade-retention in elementary and junior high school through the mid-1980s. When promoted and retained students were compared one to three years later, the retained students' average levels of academic achievement were at least 0.4 standard deviations below those of promoted students. In these comparisons, promoted and retained students were the same age, but the promoted students had completed one more grade than the retained students. Promoted and retained students were also compared after completing one or more grades, that is, when the retained students were a year older than the promoted students but had completed equal numbers of additional grades. Here, the findings were less consistent, but still negative. When the data were weighted by the number of estimated effects, there was an initially positive effect of retention on academic achievement after one more grade in school, but it faded away completely after three or more grades. When the data were weighted by the number of

independent studies, rather than by the estimated number of effects on achievement, the average effects were negligible in every year after retention. Of the 63 studies reviewed by Holmes, 54 yielded overall negative effects of retention, and only 9 yielded overall positive effects. Some studies had better statistical controls than others, but those with subjects matched on IQ, achievement test scores, sex, and/or socioeconomic status showed *larger* negative effects of retention than studies with weaker designs. Holmes concluded, “On average, retained children are worse off than their promoted counterparts on both personal adjustment and academic outcomes” (1989:27).

Despite the seemingly conclusive findings of Holmes’ review, there have been occasional new studies of the academic effects of retention. A study of Chicago children – undertaken in connection with an experiment in sustained educational intervention – found that “grade retention was significantly associated with lower reading and math achievement at age 14 above and beyond a comprehensive set of explanatory variables” (McCoy and Reynolds 1998; also, see Reynolds 1992).

A more study of Baltimore schoolchildren concludes that grade retention does increase the chances of academic success (Alexander et al., 1994). That conclusion is explicit in the title of the book, *On the Success of Failure*. Alexander et al. argued that earlier studies were methodologically weak. Along with legitimate criticisms, they dismissed many earlier studies precisely because they were old; one wonders whether they would, for the same reason, dismiss the pioneering findings of natural scientists in the 19th century. In any event, they carried out an extensive longitudinal survey, following 800 children who entered first grade in 1982 for up to 8 years, so long as they remained in the Baltimore public schools. They assessed academic achievement regularly, and, also, looked at

measures of self-concept, attitudes toward school, and achievement orientations. One important contribution of the book is a detailed account of the complex flows of students from one grade to the next – or to repeat a grade – and into and out of special education classifications. A vision of the schooling process as a linear progression in grade-level, possibly interrupted by retention, covers only a fraction of the experience of the Baltimore students.

Unfortunately, Alexander, et al.'s analysis of the Baltimore data does not support their positive conclusions about the value of grade retention.¹⁵ Most of the retention that they observed occurred at the first grade level. Here, their stated conclusions about the effects of retention were plainly negative: "... retainees fall farther and farther behind never-retained youngsters for as long as we can monitor their progress. ... any lasting benefits of retention would be apparent within the time spans observed." However, the findings were in some cases neutral or positive for much smaller numbers of students who were retained at higher grade levels, and Alexander, et al., gradually shift their conclusions from negative to positive from earlier to later sections of the text. That is, it is difficult to follow or to accept Alexander, et al.'s conclusions on the basis of a close reading of their text, tables, and graphs.

Worse yet, there are serious methodological problems in their analysis, which were documented in an intensive review by Shepard, et al. (1996). First, much of the analysis rests on comparisons of absolute test score gains of retained and promoted students. However, the test used in their study is vertically equated on the assumption that students learn more at lower than at higher grade levels. The

¹⁵ Throughout the following discussion, I have focused on same-grade comparisons of promoted and retained students, where the scores of promoted students are lagged one calendar year behind those of retained students. That is, the retained students have taken one more year to complete each grade. These comparisons are usually more favorable to retained students than same-age comparisons, in which they are one grade level behind the promoted students.

standard deviations of the reading and math tests thus decline with grade level, and low-performing students typically have higher gain scores than high-performing students, even when they are falling further and further behind in relative terms. Second, Alexander, et al., failed to observe their own methodological rules (for same-grade comparison) when they looked at the non-academic outcomes of retention. Shepard, et al., concluded that the major empirical claims of Alexander, et al., could not be sustained.¹⁶

Karweit (1999) reports a larger scale, but short-term national study of the effects of retention, based on the Prospects database, an evaluation of the effects of Chapter 1 (federal support for education of economically disadvantaged students). She was able to follow nearly 10,000 students in the 1st grade cohort of 1991 for their first three years of schooling. Thus, it was possible to compare the academic achievements of students who were retained in the 1st grade with those of students who had not been retained, after both groups had completed the 2nd grade. As is typically observed in retention studies, the retained students gained substantially in the year of retention, relative to their poor performance in the preceding year. However, by the end of the second grade, the retained students had fallen back, relative to promoted students, though not as far behind as at the end of their first year in the 1st grade (Spring 1992). In these respects, the Prospects data are consistent with many previous studies of retention. Unfortunately, as Karweit notes, it is not possible to sort out the effects of initial selection on poor test scores in Spring 1992, nor to follow the cohort into higher grades. Retention fared better in comparisons between retained students and a small number low-performing students in schools where there was no retention. However, Karweit observed that these retained and promoted

¹⁶ Also, see the exchange between Alexander (1998) and Shepard, et al. (1998).

students were poorly matched and cautioned readers that the comparisons should not be taken too seriously.

One other large-scale retention study was recently featured by the national newspaper, *USA Today* (1999), as evidence that retention increases academic achievement (Dworkin, et al., 1999).¹⁷ In an analysis of longitudinal data supplied by the Texas Education Agency, Dworkin, et al., compared the academic achievements of elementary grade students who had failed the TAAS (Texas Assessment of Academic Skills) and been retained with the much larger number of students who had failed the TAAS and had not been retained. Only about 3 percent of TAAS failures were retained. Across several two-, three-year panels of observations, from grades 3 or 4 forward, students who had been retained frequently out-performed those who were promoted. The editorial writers of *USA Today*, like the authors of the study, were quick to attribute the test-score gains of retained students to remedial instruction that was withheld from the promoted students.

There are serious methodological problems in the Texas study and plausible alternative interpretations of the TAAS score gains. Student coverage is poor. Only about two-thirds of Texas students were initially covered at each grade level. Students who changed school districts were immediately lost, as were those who moved out of state. Consequently, retention rates were much lower in the study of Dworkin, et al., than among all Texas students, as reported by the Texas Education Agency (1998: 42). Moreover, by limiting the study only to students who had failed TAAS, Dworkin, et al., followed only about 40 percent of covered students who were retained. Most

¹⁷ It is curious that *USA Today* gave this study national editorial coverage, when it had not been published formally, and its findings were not covered by any national news service except Gannett, which owns *USA Today*.

important, the same-grade comparisons that one would usually prefer to examine in studies of retention are suspect because of the systemic reforms carried out in Texas during the period of the study.

Throughout the mid-1990s, the elementary school curriculum in Texas was revised to focus increasingly on preparation for the TAAS. For this reason – and because retained students completed each new grade one calendar year later than promoted students – it is not clear whether the superior test performance of retained students should be attributed to retention or to systemic, period-specific changes in school practices – such as “teaching to the test” – that affected all students in specific grade levels. That is, one can attribute the observed improvements in test performance to retention in the Texas study only in the same way that one can attribute inter-cohort growth in educational attainment to being born in a later year; in each case, it pays to go through school more recently. There is no way to tie specific post-retention educational practices to the success of retained students, nor any basis for the belief that such practices, if they were successful, could be expanded to cover all students who might fail the TAAS.

It would perhaps be too much to say that grade retention cannot succeed, but surely there is no compelling evidence that it increases academic achievement on a large scale and in the long term. Correspondingly, there is no rationale for grade retention as an educational panacea. To be sure, the available evidence is almost all based on typical educational practice, and one might believe that new practices would yield more favorable outcomes. However, if there are effective new practices, why not use valid assessments to identify students with learning difficulties, and intervene before retention is the only alternative?

One of the frustrations of retention research is that – excepting three very early studies – there are no true field experiments. Many educational researchers dismiss this option because, they believe, it would be unethical. But if we truly do not know whether retention helps or hurts low-performing students, why would it be unethical to assign volunteers either to retention or promotion? Would this be any less ethical, say, than creating the variations in class size that have led to new understanding of the value of very small class sizes in the primary grades? In my opinion, if there is truly continuing disagreement about the observational evidence on retention and academic achievement, then a large-scale field experiment is a logical choice. Surely, such an experiment would be preferable to massive interference in the lives of many of our most vulnerable children.

Retention and School Dropout

The negative effects of grade retention on school dropout are even stronger and more consistent than its effects on academic achievement. For example, Grissom and Shepard (1989) reported that retention accelerated school dropout, based on data for several localities including the 1979 to 1981 freshman classes from the Chicago Public Schools. In a more recent analysis of data from Chicago – which predates the recent educational “reforms” in that city – Temple, Reynolds, and Miedel (1998) found that retention during kindergarten through the eighth grade increased dropout by 12 percentage points, after controls for social background, program participation, school moves, and special education placement. For two decades, the Chicago Public Schools have cycled through successive policies of

loose and restrictive promotion, and it is not clear how long the present strict policies will hold (Chicago Public Schools, 1997a).

But is there reason to doubt that the current regime of massive retention in Chicago will not also lead to increased dropout in future years?

Anderson (1994) carried out an extensive large-scale national study of the effect of grade retention on high school dropout rates. He analyzed data from the National Longitudinal Study of Youth for more than 5,500 students whose school attendance was followed annually from 1978-1979 to 1985-1986. With statistical controls for sex, race/ethnicity, social background, cognitive ability, adolescent deviance, early transitions to adult status, and several school-related measures, students who were currently repeating a grade were 70 percent more likely to drop out of high school than students who were not currently repeating a grade.

Rumberger and Larson (1998) analyzed high school dropout and completion of the GED in longitudinal data from the National Educational Longitudinal Study of 1988 (NELS88). After controlling social and family background, school characteristics, student engagement, and academic achievement in the eighth grade (test scores and grades), they found that being held back before the eighth grade increased the relative odds of dropout by the twelfth grade by a factor of 2.56 (p. 24). Furthermore, “Students who were held back before the eighth grade were more than four times as likely as students who were not held back to not complete high school or receive a GED by 1994” (p. 27). Reliable negative evidence of that strength in a clinical trial would lead to its early termination.

RACE, SES, AND TEST-BASED PROMOTION

There are also strong relationships between race, socioeconomic status (SES), and the use of tests for promotion and retention. A recent national longitudinal study, using the NELS database, shows that certain students are far likelier than others to be subject to promotion tests in the 8th grade (Reardon, 1996:4-5):

[S]tudents in urban schools, in schools with high concentrations of low-income and minority students, and schools in southern and western states, are considerably more likely to have [high-stakes] test requirements in eighth grade. Among eighth graders, 35 percent of black students and 27 percent of Hispanic students are subject to [a high-stakes test in at least one subject] to advance to ninth grade, compared to 15 percent of white students. Similarly, 25 percent of students in the lowest SES quartile, but only 14 percent of those in the top quartile, are subject to eighth grade [high-stakes test] requirements.

Moreover, the study found that the presence of high-stakes 8th grade tests is associated with sharply higher dropout rates, especially for students at schools serving mainly low-SES students. For such students, dropping out of school early—between the 8th and 10th grades—was 6 to 8 percent more likely than for students from schools that were similar excepting the high-stakes test requirement (Reardon, 1996).

What does it mean that minority students and low-SES students are more likely to be subject to high-stakes tests in the 8th grade? Perhaps, as Reardon points out, such policies are “related to the prevalence of low-achieving students—the group proponents believe the tests are most likely to help” (1996). Perhaps the adoption of high-stakes test policies for individuals serves the larger social purpose of ensuring that promotion from 8th to 9th grades reflects acquisition of certain knowledge and skills. Such tests may also motivate less able students and teachers to work harder or to focus their attention on the knowledge domains that test developers value most highly. But if retention in grade is not, on balance, beneficial for students, as the research suggests (Shepard and Smith, 1989), it is cause for concern that low-SES children and minority students are disproportionately subject to any negative consequences.

Those who leave school without diplomas have diminished life chances. High dropout rates carry many social costs. It may thus be problematic if high-stakes tests lead individual students who would not otherwise have done so to drop out. There may also be legal implications if it appears that the public is prepared to adopt high-stakes test programs chiefly when their consequences will be felt disproportionately by minority students¹⁸ and low-SES students.

New York City appears to be following a similar cycle of strict and loose retention policies, in which the unsuccessful Promotional Gates program of the 1980s was at first “promising,” then “withered,” and was finally canceled by 1990, only to be revived in 1998 by a new central administration (Steinberg, 1998a, 1998b). This cycle of policies, combining strict retention criteria with

¹⁸ For a discussion of possible claims of discrimination based on race or national origin, see National Research Council (1998 Chapter 3).

a weak commitment to remedial instruction, is likely to reconfirm past evidence that retention in grade is typically harmful to students.

Another important question is whether the use of a test in making promotion decisions exacerbates existing inequalities or creates new ones. For example, in their case study of a school district that decided to use tests as a way to raise standards, Ellwein and Glass (1989) found that test information was used selectively in making promotion and retention decisions, leading to what was perceived as negative consequences for certain groups of students.¹⁹ Thus, although minorities accounted for 59 percent of the students who failed the 1985 kindergarten test, they made up 69 percent of the students who were retained and received transition services. A similar pattern was observed at grade 2.

In addition, there may be problems with using a test as the *sole* measure of the effectiveness of retention or other interventions (summer school, tutoring, and so on). This concern is related to the fact that the validity of test and retest scores depends in part on whether the scores reflect students' familiarity with actual test items or a particular test format. For example, there is some evidence to indicate that improved scores on one test may not actually carry over when a new test of the same knowledge and skills is introduced (Koretz, et al., 1991).

The current reform and test-based accountability systems of the Chicago Public Schools provide an example of high-stakes test use for individual students that raises serious questions about “teaching to the test.” Although Chicago is developing its own standards-based, course-specific

¹⁹ Ellwein and Glass (1989) assumed that the intervention, i.e. retention, was not as beneficial as promotion to the next grade level.

assessment system, it presently remains committed to using the Iowa Test of Basic Skills as the yardstick for student and school accountability. Teachers are given detailed manuals on preparing their students for the tests (Chicago Public Schools, 1996a, 1996b). Student test scores have increased substantially, both during the intensive summer remedial sessions—the Summer Bridge program—and between the 1996-1997 and 1997-1998 school years (Chicago Public Schools, 1997b, 1998b), but the available data provide no means of distinguishing true increases in student learning from statistical artifacts or invalid comparisons. Such gains would be expected from the combined effects of teaching to the test, repeated use of a similar test, and, in the case of the Summer Bridge program, the initial selection of students with low scores on the test.²⁰ One can only hope that an evaluation of Chicago's policies, now underway at the Chicago Consortium for School Research, will provide a valid and balanced assessment of their effectiveness.

ALTERNATIVES TO RETENTION

Some policymakers and practitioners have rejected the simplistic alternatives of promoting or retaining students based on test scores. Instead, they favor intermediate approaches: testing early to identify students whose performance is weak; providing remedial education to help such students acquire the skills necessary to pass the test; and giving students multiple opportunities to retake different forms of the test in the hope that they will pass and avoid retention. Here, testing can play an important and positive role in early diagnosis and targeted remediation.

²⁰ In the Chicago Public Schools, each retest is based on an alternative form of the Iowa Test of Basic Skills.

Intervention strategies appear to be particularly crucial from kindergarten through grade 2 (Shepard et al., 1998; American Federation of Teachers, 1997a). Some of the intensive strategies being used at this level include preschool expansion, giving children who are seriously behind their age-level peers opportunities to accelerate their instruction, and putting children in smaller classes with expert teachers.²¹ Such strategies are being implemented in school districts across the country.²² Data on their effectiveness are as yet unavailable.

These alternatives to social promotion and simple retention in grade should be tried and evaluated. In our judgment, however, the effectiveness of such approaches will depend on the quality of the instruction that students receive after failing a promotion test, and it will be neither simple nor inexpensive to provide high-quality remedial instruction. At present only 13 states require and fund such intervention programs to help low-performing students reach the state standards, and 6 additional states require intervention but provide no resources for carrying it out.²³

²¹ General intervention strategies employed throughout grades K-12, as described to the committee by James Watts of the Southern Regional Education Board, include clear core-content standards for each grade and course, clear communication of these standards to teachers and parents, having expert faculty, professional development for teachers, and extra instruction beyond the regular school day.

²² In the Long Beach School District in California, children are assessed beginning in kindergarten. When problems are found, interventions include parent-teacher conferences and mandatory summer school after grade 2. If after completing the 3rd grade and subsequent summer school a student has not reached the 1st grade reading level, he or she is retained in the 3rd grade until reaching the 1st grade reading level. No one test holds students back (interview with Lynn Winters of the Long Beach School District). Cincinnati uses grouping and intervention as well as intensive instruction and smaller classes to help children who appear to be having difficulty staying at grade level (American Federation of Teachers, 1997a).

²³ In Chicago, there is a standard summer program for students who fail the Iowa test at designated grades. Many schools also offer extended-day programs aimed at helping students pass the test. The decision to offer these programs, as well as their content, is made at the school level. Funds for such programs must be found in each school's annual lump-sum allotment (American Federation of Teachers, 1997a).

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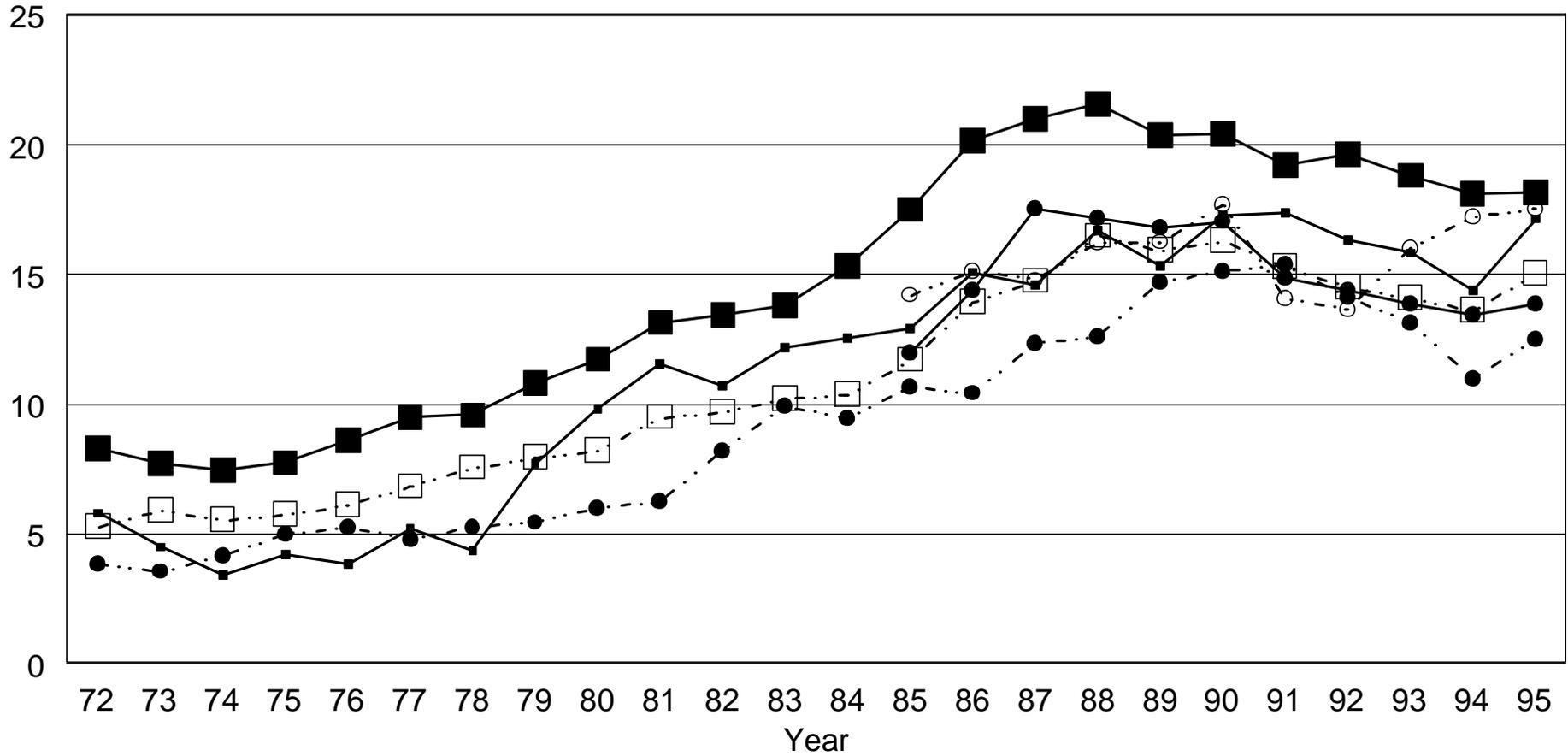
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Figure 1
Percentage of Six Year Old Children Who Have Not Entered First Grade

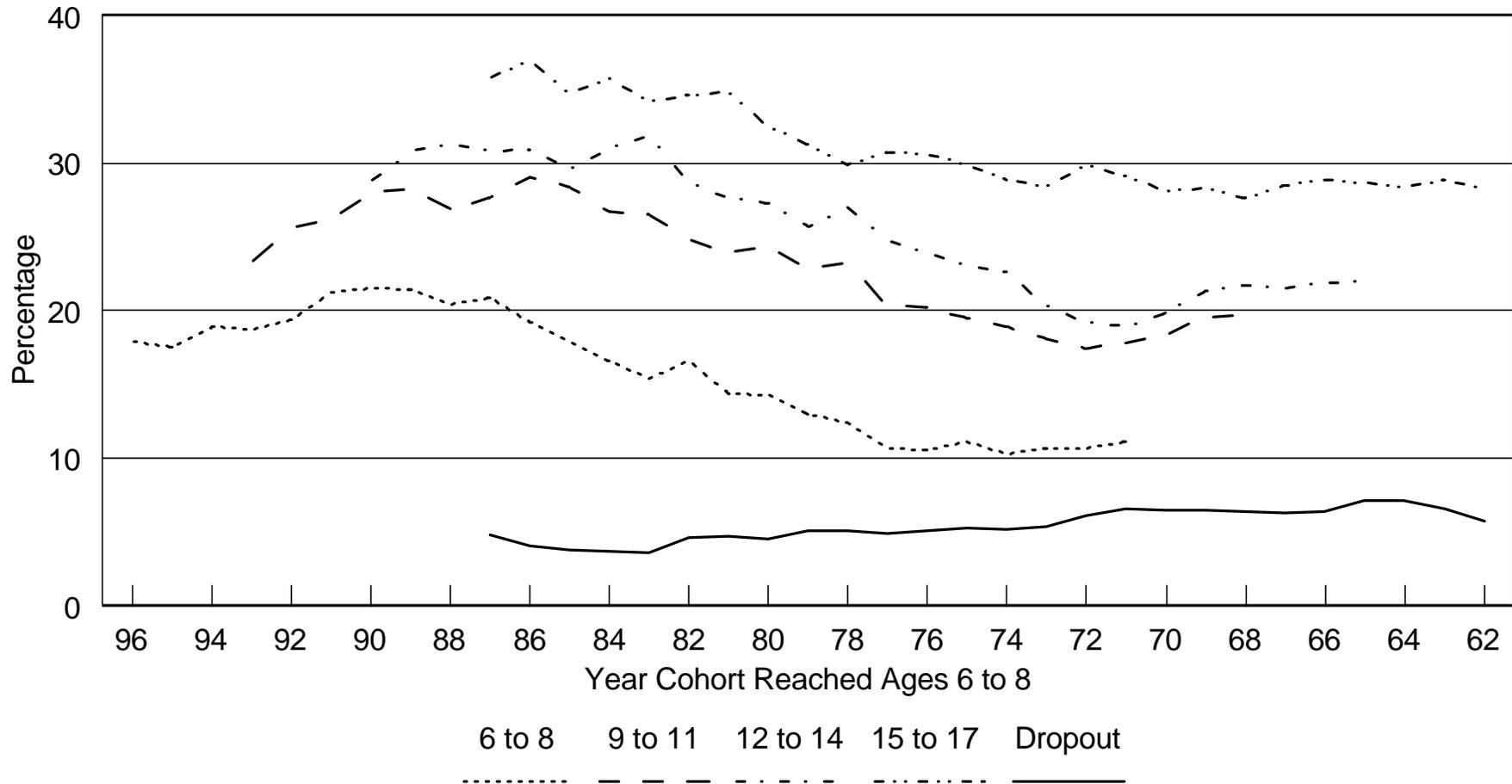


White male White female Black male Black female Hispanic male Hispanic female

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Source: U.S. Bureau of the Census, Current Population Reports, Series P-20. Entries are three-year moving averages.

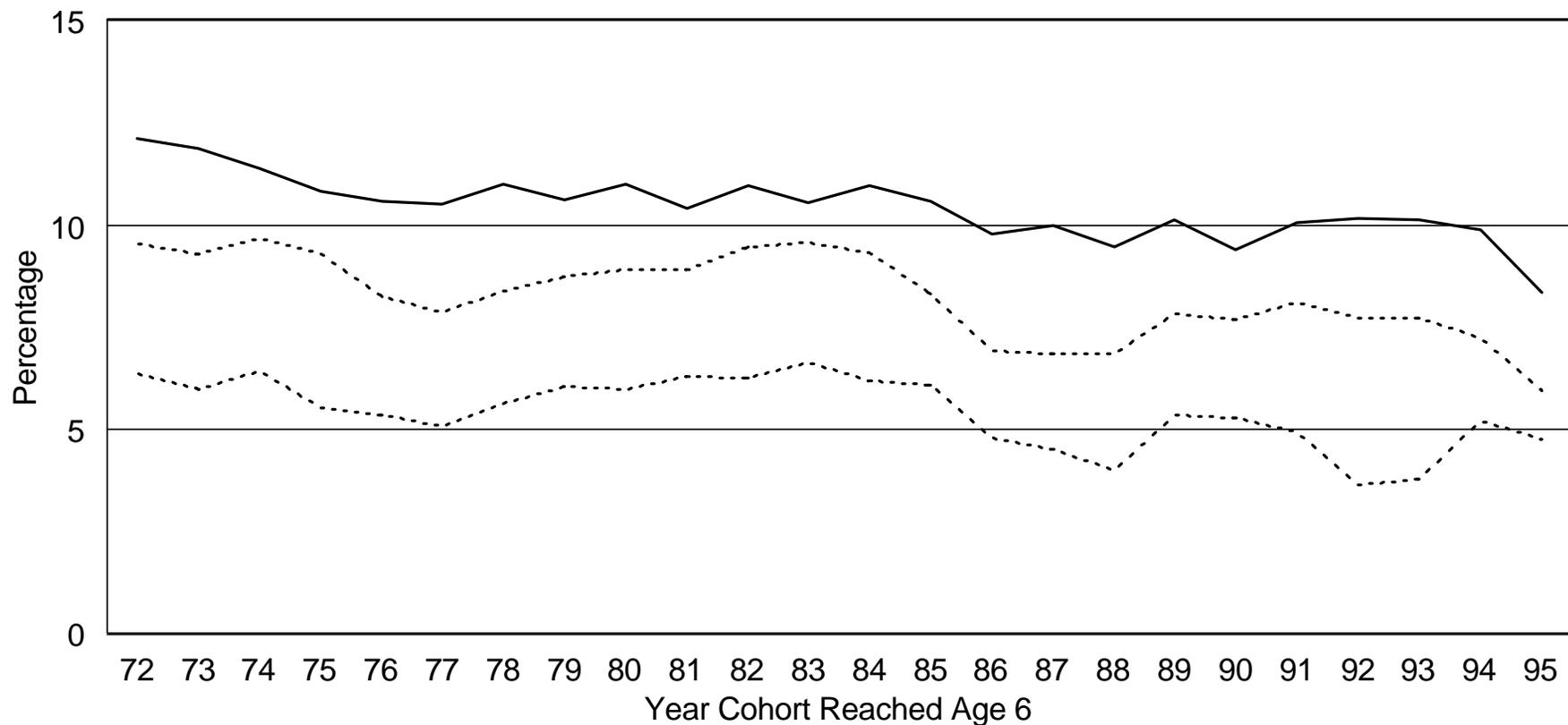
Figure 2
Percentage of Children Enrolled Below Modal Grade for Age
by Age Group and Year in which Cohort was 6 to 8 Years Old



Source: U.S. Bureau of the Census, Historical Statistics, Table A-3, Persons 6

Dropouts are included in the series at ages 15 to 17.

Figure 3
Change in Age-Grade Retardation from Age Six
to Ages Seven to Nine by Year When Cohort Was Six Years Old



From ages 6 to 7 From ages 6 to 8 From ages 6 to 9

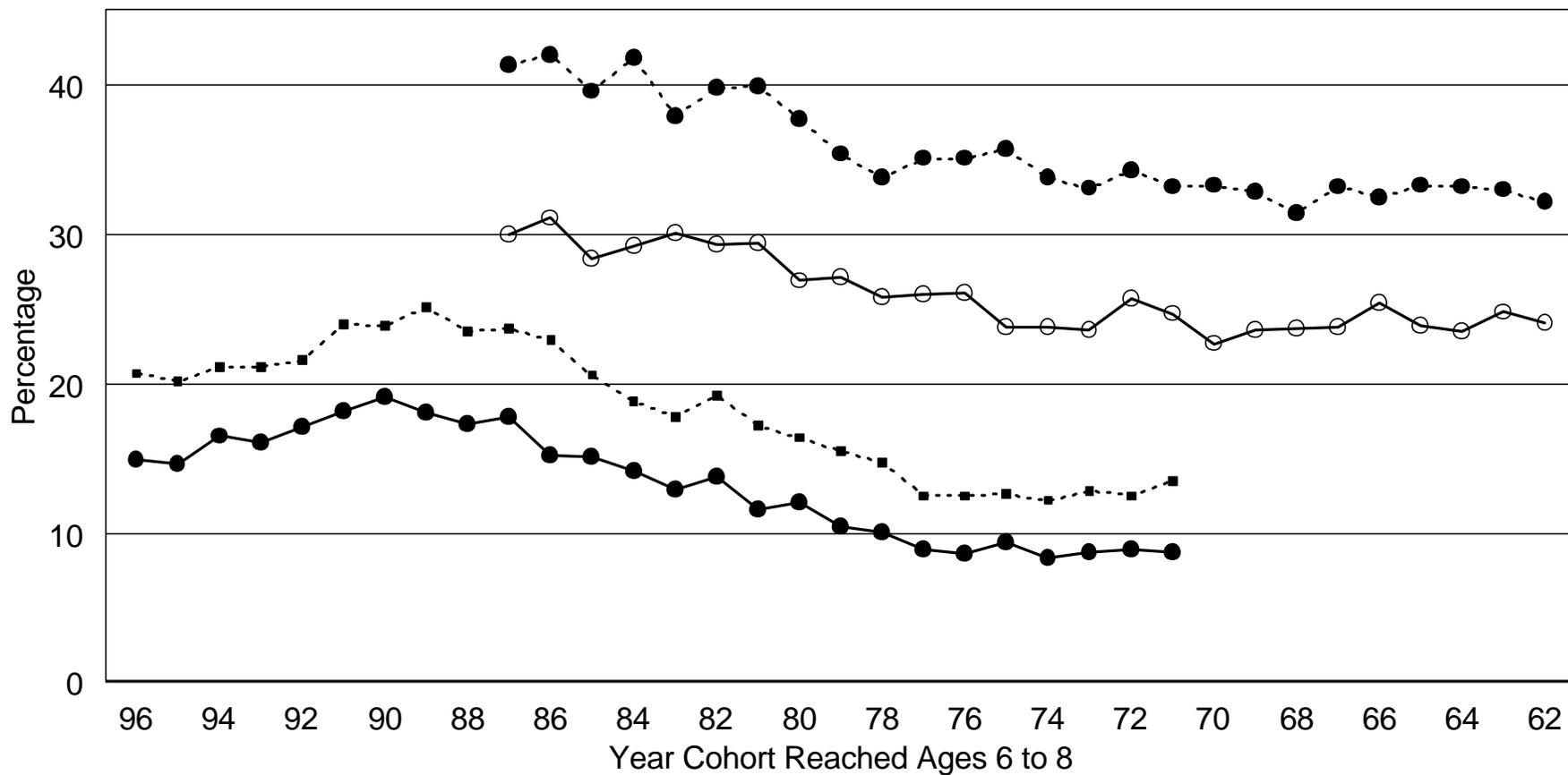
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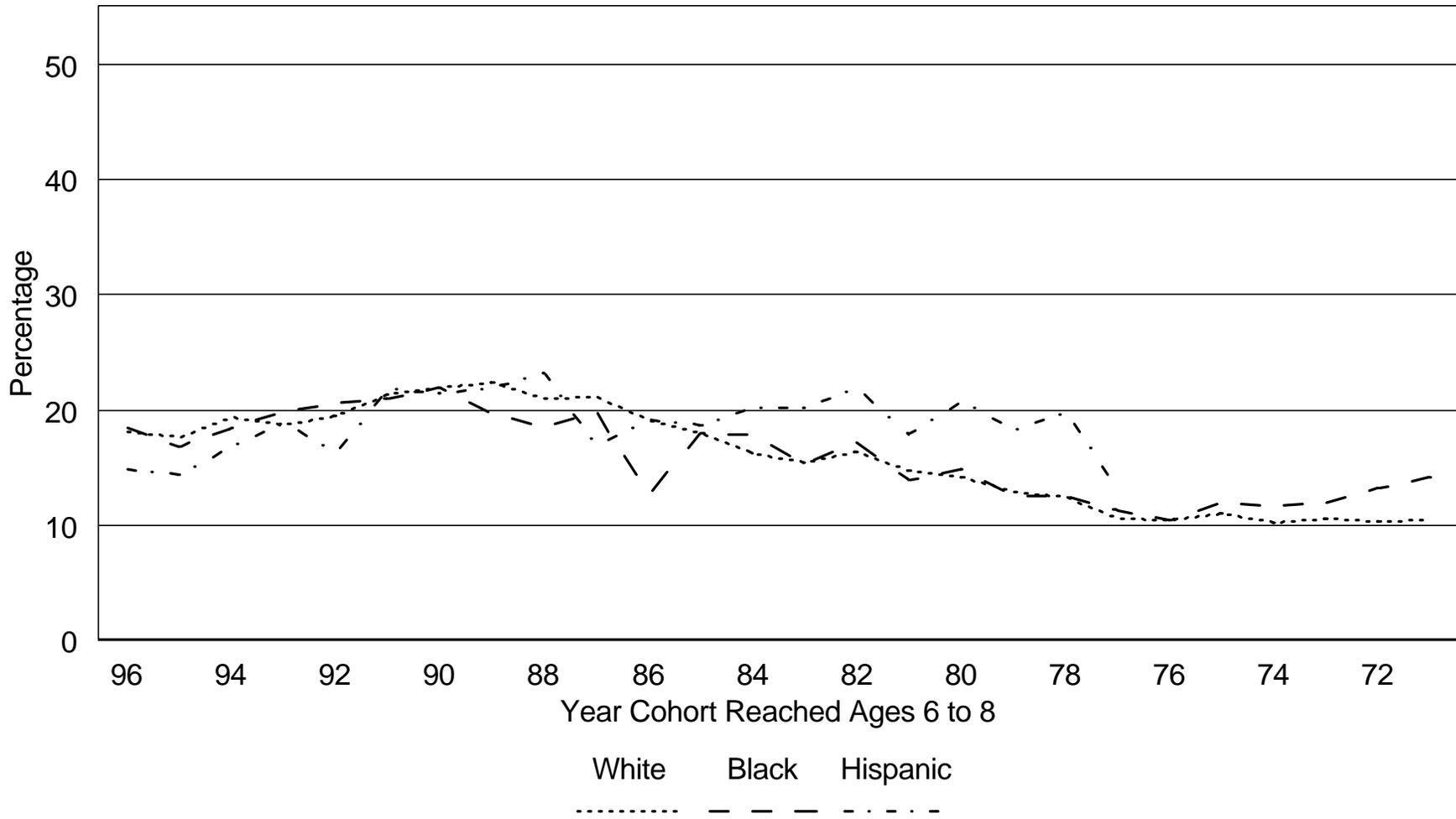
Source: U.S. Bureau of the Census, Current Population Reports,
 Series P-20. Entries are three-year moving averages.

Figure 5
Percentage Enrolled Below Modal Grade at Ages 6 to 8 and
at Ages 15 to 17 by Sex and Year Cohort Reached Ages 6 to 8



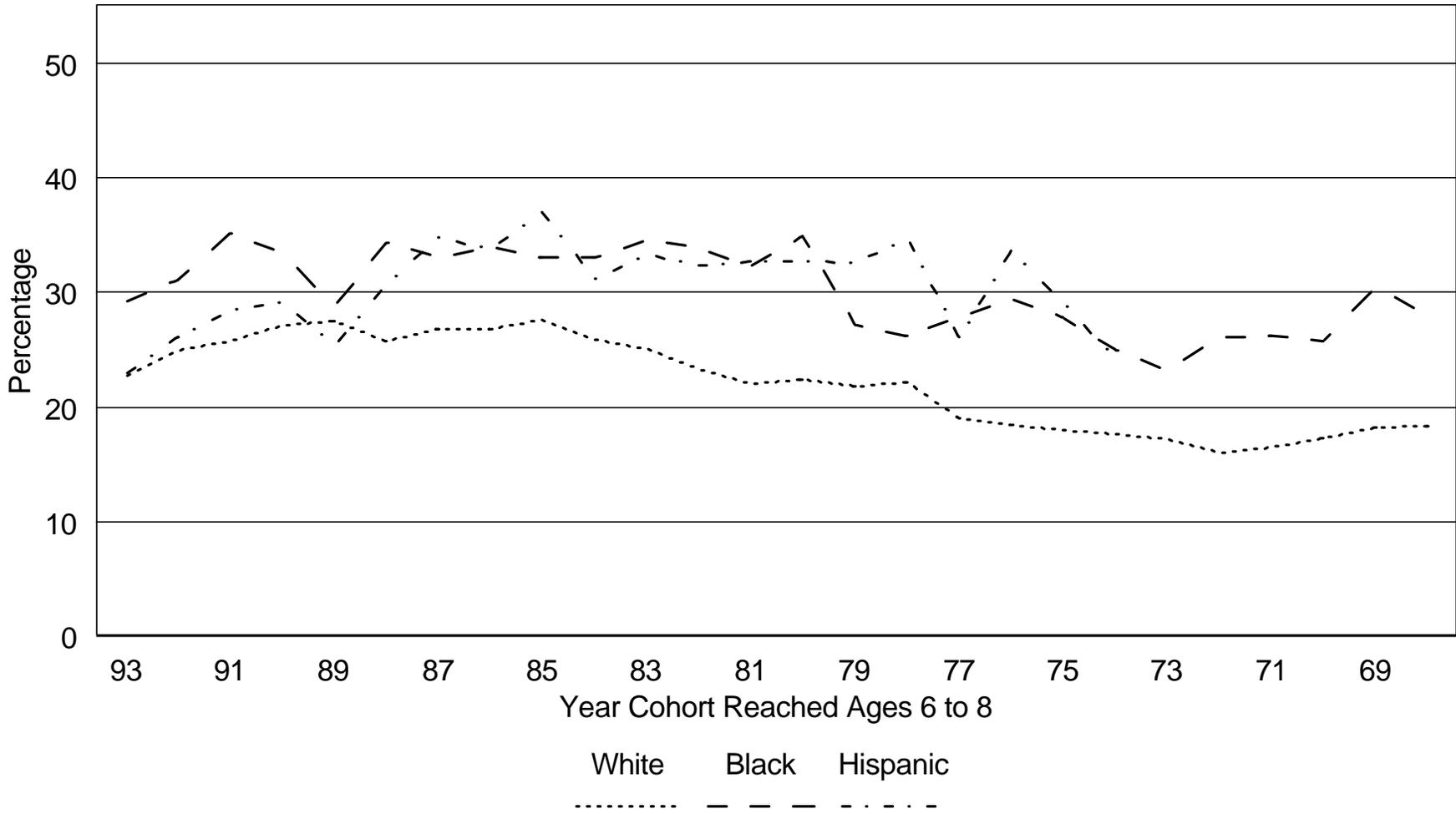
Male, 6 to 8 years old Female, 6 to 8 years old Male, 15 to 17 years old Female, 15 to 17 years old
■..... —●— ●..... —○—
 Source: U.S. Bureau of the Census, Historical Statistics, Table A-3, Persons 6

Figure 6
Percentage Enrolled Below Modal Grade
at Ages 6 to 8 by Race-Ethnicity and Year



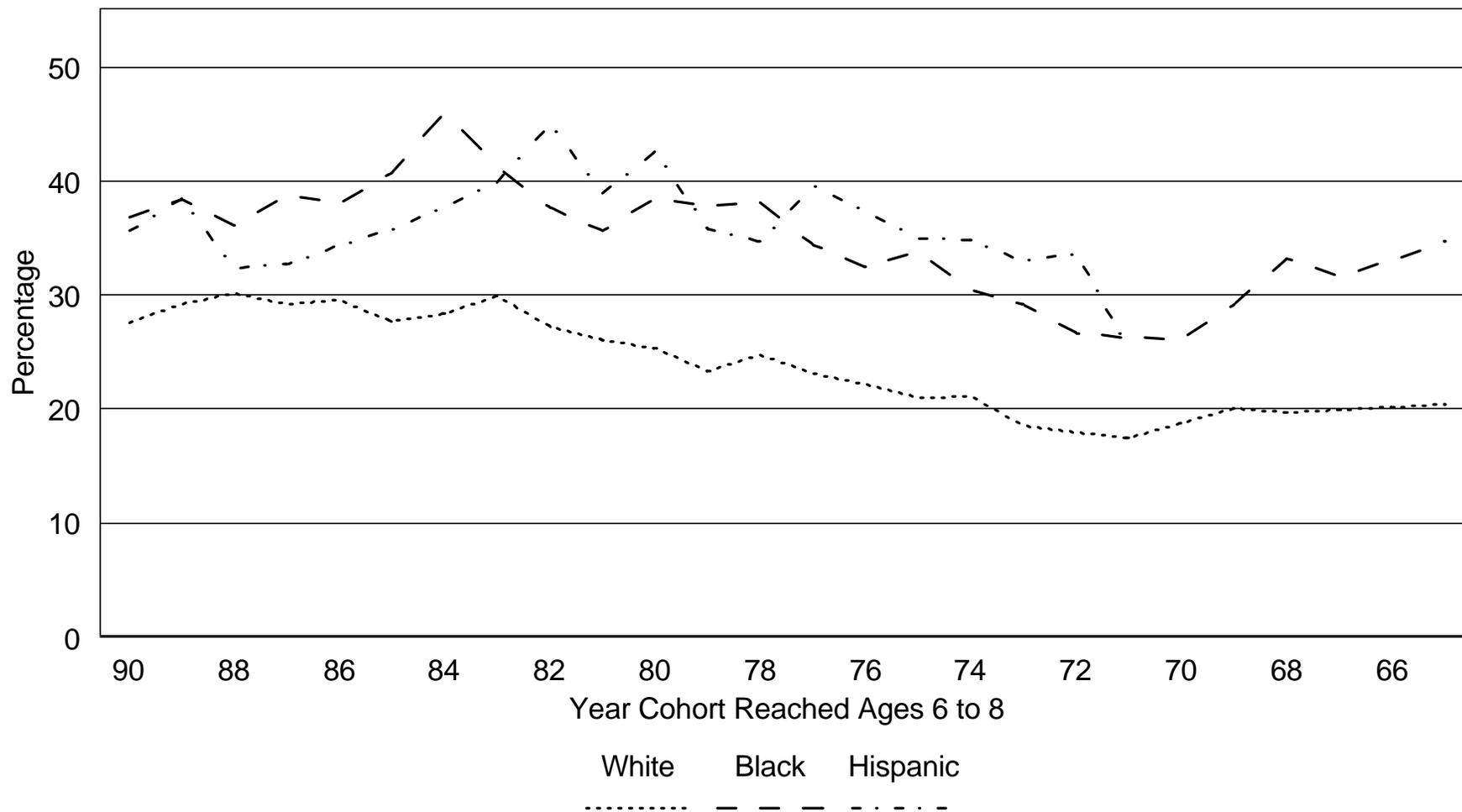
Source: U.S. Bureau of the Census, Historical Statistics, Table A-3, Persons 6

Figure 7
Percentage Enrolled Below Modal Grade at Ages 9 to 11
by Year Cohort Reached Ages 6 to 8 by Race-Ethnicity



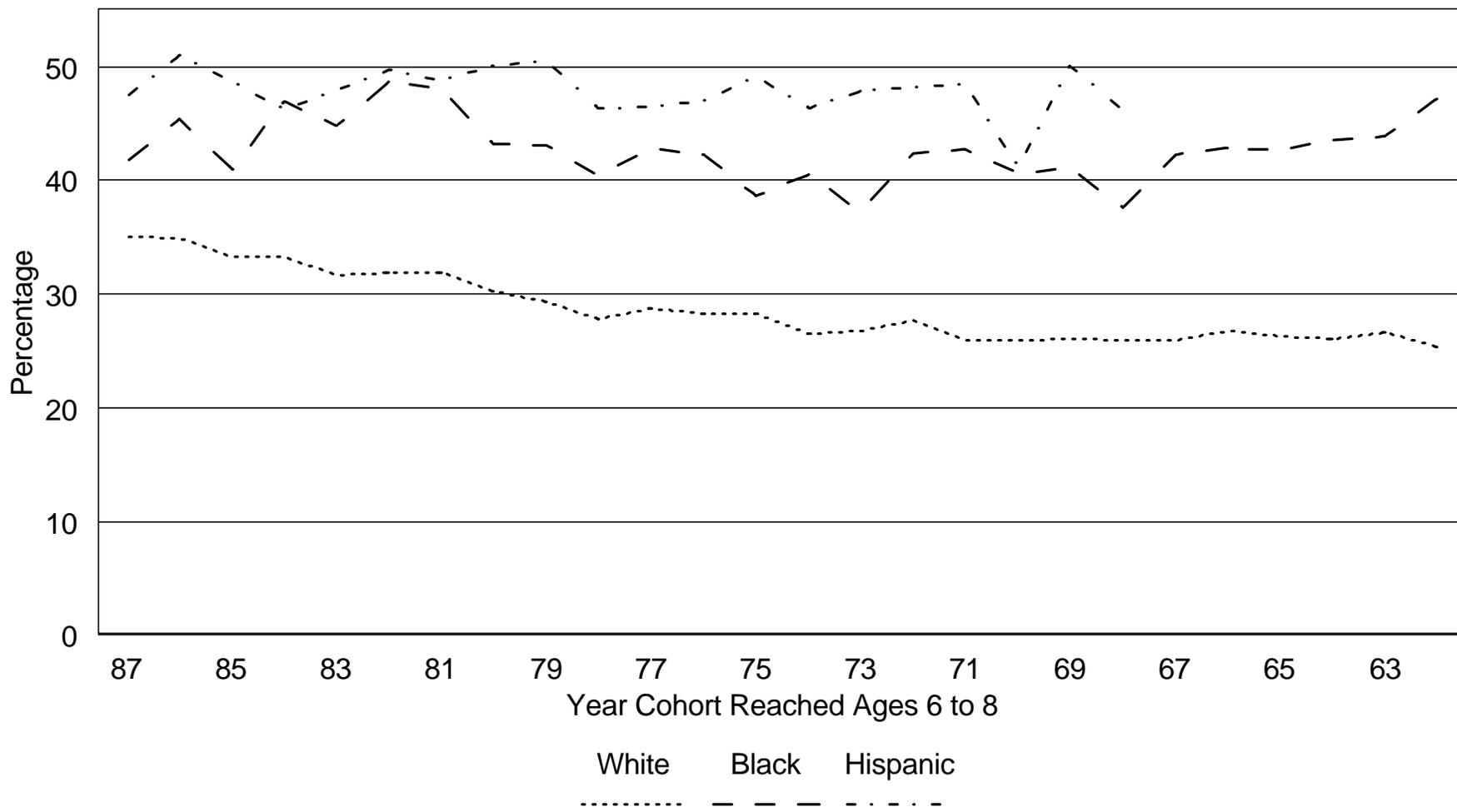
Source: U.S. Bureau of the Census, Historical Statistics, Table A-3, Persons 9

Figure 8
Percentage Enrolled Below Modal Grade at Ages 12 to 14
by Year Cohort Reached Ages 6 to 8 by Race-Ethnicity



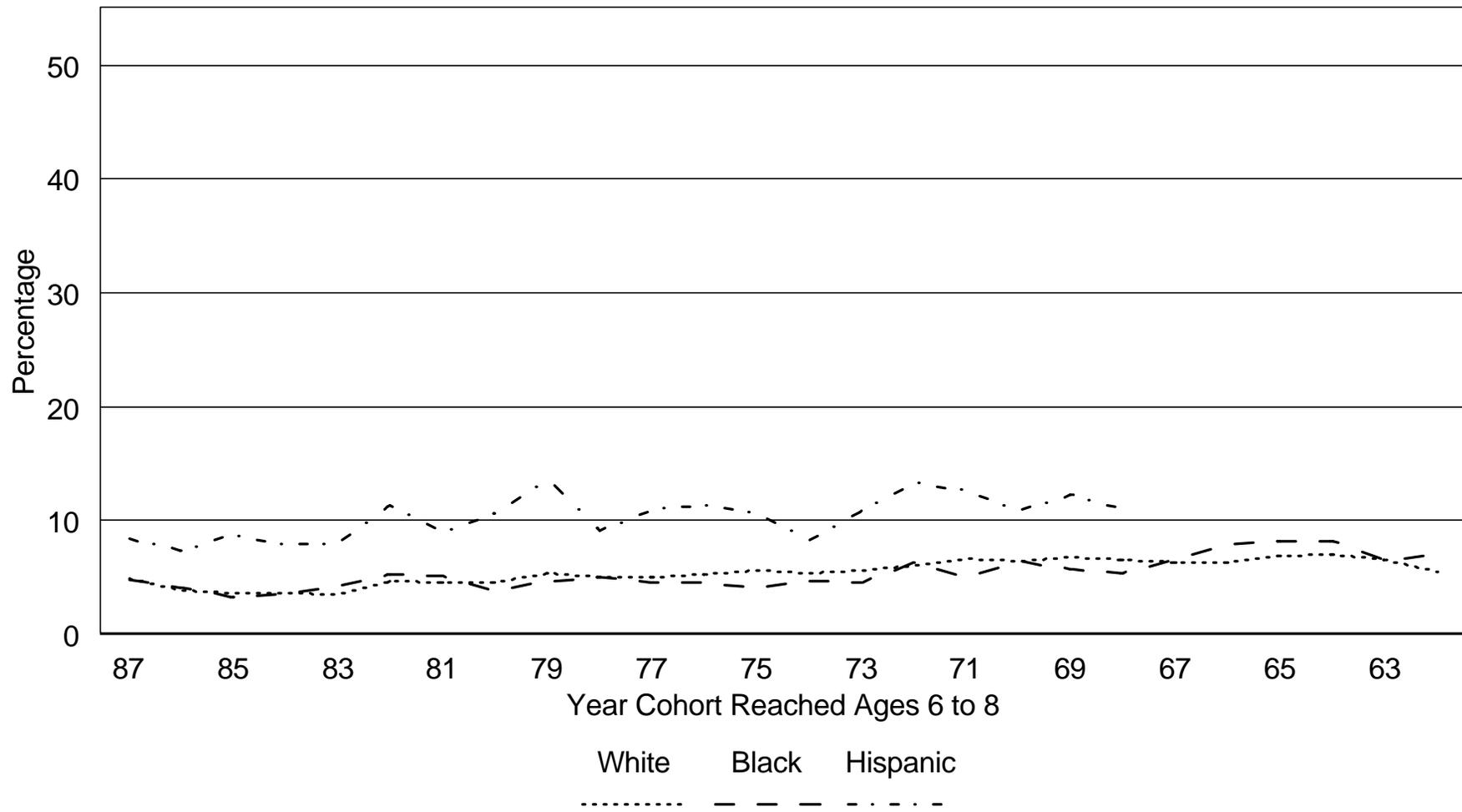
Source: U.S. Bureau of the Census, Historical Statistics, Table A-3, Persons 1

Figure 9
Percentage Enrolled Below Modal Grade or Dropping Out by Ages 15 to 17
By Year Cohort Reached Ages 6 to 8 by Race-Ethnicity



Source: U.S. Bureau of the Census, Historical Statistics, Table A-3, Persons 1

Figure 10
Percentage Dropping Out by Ages 15 to 17
By Year Cohort Reached Ages 6 to 8 by Race-Ethnicity



Source: U.S. Bureau of the Census, Historical Statistics, Table A-3, Persons 6

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